J. Nelson Spaeth.

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STATE LAND POLICY IN MICHIGAN[1]

BY P. S. LOVEJOY

With the absorption into "Reserves" and National Forests, of the bulk of the timberlands remaining in the public domain, came a curiously sudden halting in the progress of forestry. Save in a few states, recent years have seen scant material progress in forest land acquisition or administration. The National Forest expansion lags. But it proceeds, at least slowly, in the Appalachians, and in New York and Pennsylvania, state activities show steady gains. Why not in other regions or states?

The chief explanation, I think, lies in this: That the bulk of the timbered lands of the unappropriated public domain were in rough and mountainous country obviously unfit for agriculture. The purchase areas in the Appalachians, in New York and in Pennsylvania, are also mountainous and unfit for agriculture but have obvious values for timber production and current utility for recreational utilization. That is to say, forestry made progress so long as it did not conflict with the precedents and dominant ideas as to land utilization—so long as it did not run counter to the accepted notions as to the "need" for more land in agriculture: "agricultural development."

Those pro-farm precedents and notions have long been dominant with us and still function as the chief formula as to land utilization. They may not be attacked or even questioned with impunity. Even in the Roosevelt-Pinchot period they furnished the most common weapon of those opposed to the National Forest program. Still later, the friction developed about the "June 11th" work, led to the Act of August 10, 1912, and the detailed "classification" of the potentially agricultural lands in the Forests. That was a simple affair as com-

[1] Delivered before the annual meeting of the Society at Boston, December 29, 1922.

pared with an equivalent "classification" or segregation of the pro-forest and pro-farm lands of the non-mountainous regions.

While a considerable aggregate of rough and obviously non-agricultural land remains unabsorbed by the National and State Forests, the bulk of the softwood producing land from which our future supplies must come, is located in the sandy levels of the Lake States and South, mixed through with irregular areas of present or potential agricultural value. In these regions and under these circumstances, forestry is making slow or dubious progress, for any definite advance is made at the sacrifice of current notions as to agricultural utilities—and those notions are dominant, not to be questioned or attacked with impunity.

These relatively level softwood lands are in private ownership and their owners are paying taxes upon them: hoping or expecting, in some manner, to be able to realize upon their ownership and investment. In this wholly natural desire they are aided and abetted by local communities, the technical agriculturists of the colleges and experiment stations, and by the politicians. The local communities conceive their prosperity to be dependent upon the expansion of their farmed areas. The technical agriculturists consider low-grade or poorly located land as a challenge to their skill in juggling crops and fertilizers. The politicians, of course, trail the current interests of their constituent landlords and communities.

In addition to all this is the background of our pioneering traditions, with the forest rather an enemy and the values of forest products nominal or nothing as compared with the values of farm products.

What wonder, then, if the dedication of land to indefinite forest seems to many as a last resort and to be forestalled in any manner available? So, I think, is begotten the persistent idea that "*Our* land is too valuable for mere timber growth." It is this notion, I think, which has obscured the whole situation and which still prevents the forester's concepts and program from receiving even intelligent—much less sympathetic—consideration.

So any agricultural wildcat gets a run for its money, or money for its run; but forest crops, as crops, do not even get decent consideration on their merits—save as a far-off and hypothetical last resort when agronomist, plant breeder and soil expert shall acknowledge themselves beaten. And so the forester and his program has been hung up.

The rule is that a flanking movement is less expensive and more apt to be successful than the direct attack. The direct attack by foresters

upon the dominant going-to-farm-it-soon idea has usually been well smashed before it even got well started. The classic example is that of Vilas County, Wisconsin. There the State Forester recommended the creation of a million acre forest, and was so indiscreet as to indicate the proposed boundaries, and to allege or intimate the presence of great areas of land chiefly valuable for forests. Whole County Boards came boiling to the capitol, fighting mad at thus having their lands bedamned and their agricultural future blocked. The State soil surveyors were instructed to survey and report upon the area.

This they did, and came to the conclusion that: "The line between soils which can unquestionably be farmed with profit under present conditions, and those concerning the farming of which there is doubt, should be drawn between medium and fine sand. . . . Attention is called to the fact that there are other districts in the State which, because of a preponderance of land of low value for farming purposes, would be well suited for reforestation . . . north-central Bayfield, for instance."

But the Bayfield survey, although speaking favorably of fruit, wheat, potatoes, peas and turnips, and although showing a number of townships to be of Coloma gravelly sand, and although remarking that this "is a poor agricultural soil, being loose, incoherent and highly susceptible to drought," passes up all consideration of the availability of this area or soil for forests with the statement that "the steep slopes should be reforested." The last census showed about 5 per cent of the county's 961,000 acres to be improved.

This, then, is the sort of treatment which forestry receives as the result of direct attack upon the farm-it-all idea.

To proceed with a controversy as to the technical correctness of the soil man's or agronomist's long-held position is almost futile. There is no evident limitation as to the possibilities and "potential" uses of land for agriculture. Neither will it help to dwell lovingly upon the evidences of actual or potential returns from forest crops or to try to force forest crops into the category of the agronomist's availables. In time, no doubt, such a procedure might make headway but it is hopelessly too slow. The thing to do, I think, is to sneak up on the blind side of the proposition and make it trip itself on the dominant idea.

That there must be a great fallacy in the farm-it-all idea is quite evident: else we should not have such great and growing areas of

deforested and idle land. The fallacy, of course, lies in the distinction between agricultural *possibilities* and agricultural *practicabilities*. The real issue is not one of farming technology but one of land economics. The agronomist and farmer "might," but *have* they?

The flanking attack does not fight it out on such propositions as: "You can't farm that land at a profit," or "Timber will pay better on that land than your orthodox crops," for in such controversies we have merely one group of crop enthusiasts against another, with the referee, the public, badly prejudiced against one group. Instead of that manner of direct attack, the flanking attack passes the burden of proof to the farm-it-all contingent and marshals the census to their confusion: "You said you could and you haven't done it."

Handled in this manner, even the matter of private ownership becomes rather an advantage to the forester's position. The fact that taxes and carrying charges accumulate is easy to demonstrate: obvious. So is the fact that the aggregate of idle tax-bearing lands increases fast.

There is, therefore, a computable limit upon a landowner's ability to carry his holdings without returns. Inherent in the situation is also a definite time-limit within which remedies must be found—if they be found at all. Confiscation of the idle lands by accumulating carrying charges races with the ability of the owner to get out from under. He may hope to get out from under only by finding a buyer for his idle lands, to whom the burden may be passed; or the owner must himself discover ways to make his lands return at least enough income to cancel or mitigate the accumulating carrying charges.

From this aspect it is easy to force the essential issues. To landowners, forest communities and experiment station specialists we say: "Hi-there! Look at all this idle land! Look how long it's been idle already! What's the matter here? How much longer is that land going to lie there unproductive, eating its head off in taxes? Relate your answer to the current curve of raw-land utilization as shown by the census. Cut out the rainbow stuff and talk facts, too. How long is that land going to remain idle and unproductive if we wait for intensive agriculture?"

There is little escape from the answers to these questions and from this point the next step is easy. The indubitable fact is that this land is apt to remain idle for "X" years. Very well, at existing tax rates and interest, what must that land sell for in "X" years in order that

the owner may at least break even? The answer to that will often indicate preposterous totals and the conclusion: "The capital investment in this land will be confiscated and the land will be bankrupted before it becomes available for intensive agriculture."

With that point established or admitted comes the next item: "Any income is better than no income." It follows that: "Forest crops are better than no crops." And: "For these lands, and for a long time, it is *timber or nothing.*" Q. E. D.

With the opposition now out-flanked, the whole nature of the situation is changed and the issue is as to ways and means rather than as to facts and fancies. The old opposition now becomes a useful ally, and a new conception of land "development" and land utilization has been established. Under such circumstances the forester may have all he can show good title to, and the ex-priests of agriculture—agronomist, soil-expert, and what-not—come seeking grace before new altars.

In theory, at least, this is the approximate logic of the recent developments in Michigan, detail as to which is available elsewhere.

In summary, the "Michigan plan" derived out of committee reports to the Academy of Science. These, perhaps for the first time in America, attempted to discover and discuss the net truth as to a State's land affairs, in Michigan as in other cut-over States, long known to be in unhappy shape but never before dealt with in candor and competence.

A third of the State was gone or going bankrupt with idle land, the reports said, and the essentials of any adequate program for the salvage or reclamation of these lands, were quite clear. First the fires must be stopped, and regardless of the ultimate destiny of the lands, as for agriculture, grazing, commercial forests or the recreation industries.

The successful development of these several land uses, said the reports, was contingent upon adequate and dependable information as to the past and present condition of these idle lands. Such information was to be obtained only through such a "soil and economic" survey as would discover and record the leading or limiting factors affecting the utility of the lands for each of the possible forms of utilization. Most of these limiting factors would be economic rather than depending upon the soils alone. The survey should therefore be a *land in-*

ventory instead of a mere *"soil survey."* It should utilize to the full all the technical ability available.

Parallel with the work of such a survey, should go the creation of the most modern of administrative machinery which, building on the data returned by the survey, should formulate and apply the specific measures and policies shown to be most practicable. These must obviously deal chiefly wth agricultural development, forest development and "tourist traffic" (game, fish and fur—the recreational industries).

Very fortunately a recent reorganization of the State government had established Departments of Agriculture and Conservation, each with well defined responsibilities. Very fortunately, both of these departments had been "sold" to the new idea and, cooperating with each other and with the University and Agricultural College, and with an advisory board from the Academy of Science, and many other organizations and individuals, being constantly involved and consulted, a technique for the survey was devised, parties were put into the field, and detailed plans for administrative machinery were worked over and, presently, began to go into effect. The whole undertaking constantly enlarges. It tends rapidly toward a comprehensive job of engineering—the engineering of a real scheme of land development and on an unprecedented scale, save as the National Forest administration makes a precedent.

Up to the present the following items have been accomplished or seem well on their way toward definite solution: A season's work in the field has established the complete practicability of making an adequate land inventory, with soils, forest and agricultural economics, water-power, game and fish and recreational resources all covered, reported on by experts and experts working in intimate cooperation.

A new fire-control plan, and an appropriation of around half a million dollars for the next biennium, will be officially proposed to the legislature and will go in with unprecedented support.

A detailed scheme for the identification of the really choice raw agricultural lands and for stimulating their settlement and for protecting the interests of incoming settlers has been formulated. This scheme specifically tends to discourage the settlement of lands less good than the best available.

Legislation calculated to remove the existing unjust discrimination against growing timber crops has been formulated at the request and

with the assistance of the appropriate State officials and is to be offered to the current legislature.

In addition to these net accomplishments there are under way and in process of negotiation the following items of policy and procedure:

A definite scheme for the extension, administration and improvement of the State Forests.

A definite scheme for the stimulation of planting and other intensive work on the privately owned forest lands now idle and not available for early agricultural development.

A definite scheme for stimulating the utilization of recreational resources, in general to parallel similar work in agricultural extension.

Not yet undertaken in a definite way but already under preliminary discussion are the items:

Prevention of a continued devastation by lumbering in the virgin stands.

Woodlot technique, administration or service.

It is not expected, of course, that all of these items of policy and program can be formulated and put into effect in the immediate future, but that they are officially recognized as being essential components to any general and adequate State land policy, and that they are being worked on and worked over, cooperatively and steadily, is at least to be considered and reported. The Michigan plan is no little patchwork of current expediencies.

To my mind the biggest and most promising feature of the Michigan plan is the concept or recognition by nearly all of the many agencies and interests concerned, that anything which may properly be called "development" must involve parellel and synchronized activities in the different fields; that the most rapid and successful development of agriculture and of forests, are conditioned each upon the other. But there is nothing really new as to that: it is the original National Forest conception, remodeled to Michigan conditions.

The technique by which the work was gotten under way, however, does seem to involve something rather new. The intimacy and intricacy of the cooperation required and materialized is at least new in scale and variety. Its essence is the utilization of "the entire technical personnel of the State, in cooperation with appropriate federal agencies" as originally specified by the Academy of Science.

If the Michigan plan continues to work out as successfully as it has started, it will be chiefly because those in charge "see their job big"

and because they are big enough and skilful enough to hold together in reasonable harmony, the diverse interests concerned, at least for such a period as may prove necessary to establish adequate precedent and develop something like a routine.

If the Michigan plan should presently begin to fail in various particulars, it will probably be because of individual or professional jealousies and incompatibilities or because of insidious political pressure originating from land owners or communities which decide that they do not dare to have the facts as to their status made public.

If the difficulties of advancing the application of policies shall prove too great, for the present, it is not wholly essential that they should all proceed abreast, for, if the Inventory Survey is but permitted to continue, unfettered, it will presently wedge so far into the situation as to force a resumption of the delayed items of administration. To perfect and maintain and continue the Survey, therefore, is the main job for the present.

That the Survey would certainly meet with strong opposition was anticipated from the first. In order to protect it through its early years two measures were taken. First, great care was taken in the selection of the areas first to be covered, so that no unduly acute issues might be precipitated until the theory and technique of the Survey might become well established. Second, it was decided that the Survey should not pretend or in any manner attempt to make anything like a final or complete "classification" of the lands covered.

The reasons for that decision were excellent and various. In the first place, no soil expert, agronomist or forester could possibly hope to anticipate by even 50 years, the precise boundary of "agricultural" or "forest" land. Any such attempts would involve endless technical estimates and guesses and would certainly prove very irritating to landowners and local communities. But the identification of the areas really and at present choice for agricultural development should prove simple and safe enough. Likewise the identification of the areas which will remain indefinitely non-agricultural but fit for forest should prove practicable.

If, then, the pro-farm activities are focused upon the development of the choice raw farm lands, and the pro-forest activities are concentrated upon the obviously non-agricultural lands, both interests will be served and without conflict. The areas of each class of land are so extensive that it seems certain that both groups will be kept very

busy for at least some decades. During that period, the relative values of farm and forest products and the relative availabilities of given lands for farm or forest, will certainly become increasingly obvious.

In the meantime, of course, the bulk of the idle lands must remain in economic limbo, supra-marginal for forest and sub-marginal for farming.. At least that is the tentative theory of it. But for these in-limbo lands adequate fire control is to be provided and with that will certainly come a great increase in game, fish and fur and constantly increasing recreational utilities. For these lands, also, it is proposed to provide a just timber-crop tax law. With fire protection and a just tax law, perhaps many land owners will decide that it is practicable for them to practice some manner of forestry. Perhaps it will prove practicable to devise some manner of State or federal assistance in planting operations for such lands. Perhaps, when finally confronted with the proposition: "Timber or nothing," it will seem expedient to many owners and communities to urge a steady expansion of the State and National Forests, with State and Nation both buying in land which must otherwise and presently be confiscated by carrying charges.

The problem is not, I think, whether things will work out thus or otherwise, but how to make them work out fast: how to hasten the essential issues. The major issue, of course, is: "Timber enough for everybody." But that is yet an abstraction to all save foresters and economists. The proximate issue is: "Idle land. How long is it to stay idle? How long before it goes bankrupt? Is a timber crop better than nothing?" Whatever can force the question of: "Timber or nothing," promises to be effective and at once.

With that question—those questions, I think, we may hope to get a cleavage where heretofore we have been working across the grain. The best splitting rig yet devised seems to be the new-style "soil and economic survey," more properly, the "land inventory.'

RECREATION IN FORESTRY [1]

By Arthur H. Carhart

U. S. Forest Service

The recreational use of forests has developed in the past decade until policies, plans and improvements relating to it form a considerable problem for those who are concerned with the handling of our forested lands. It will become increasingly important in the future. Now is the time to put real constructive effort in thought regarding it, if the best results are to be obtained both in rational development of the recreation values of the forests and in a sensible handling of recreation as a part of the products of the forest.

Before anything whatever can be done in a constructive, sound manner there must be a fundamental question answered. Is recreation a product of forests? And a second question also is important. Is the present demand permanent or is it temporary?

Humans have been on the earth so far as we know about 200,000 years. In that time they have lived all but a few centuries in the open. The instincts, mental processes and physical make-up of the present-day human are more of outdoors than of the city. Only our great adaptability has made it possible for us to exist under conditions so different from outdoor surroundings as those found in the city. It is wholly natural that the people who are now living under the complex developments of modern civilization should turn to the outdoors for relief—a partial revertment to our more typical environment. What is more, with an increase of artificialities of modern human existence there will be an increasing demand for touch with our native habitat. The outdoors. The demand for outdoor recreation as the essential antidote for too much city is basic, is fundamental. The demand for recreation found in forested places is most permanent. It is part of the fiber of our being.

That answers the second question. It also throws light on the first. When the human race was developing through the multiple centuries that it has lived in outdoor existence the complex instincts we now inherit were being built. Instinctively the man of today when picnick-

[1] Read before the Denver Section, December 16, 1922.

ing, camping or otherwise stopping in the outdoors, turns to the wooded places. The foundation for this reflex turning to tree-covered areas is back in the past. Many times our savage forefathers may have been caught in the plains or desert country and treated to a severe lambasting before reasoning that the woods offered shelter from weather, enemy, or beast of prey. It may have taken some toilsome, ponderous thinking on their part to find that the prairies and desert were places of want, of privation or of suffering, and that the wooded places had shelter, food and other comforts and protections. But after a lot of laborious thought this became established in the minds of the outdoor humans. Now today there is no such reasoning. Modern man going into the open seeks trees as his native habitat without any reasoning whatever. Bill Stonehatchet did all of the thinking for him and because it is so well founded, so inground in our reflex mind processes wherever there are green trees there also is recreation for the modern man.

A forest cannot be grown without producing recreation values for the man of today. Trees are an absolute essential for every recreation ground of modern humanity. Recreation is a basic, a genuine, an inseparable product wherever there is a forest.

It is easy to draw from this discussion that the recreation of the forests is a necessity. Recreation often has been looked upon more as an entertainment than a necessity. But it is in fact the essential complement of work. Work cannot progress steadily for an individual without some relief in some sort of recreation. The best recreation is found in activities as far removed from the field of work as feasible. Recreation in general is a necessity while recreation produced in the forest lands is the best style of that necessity we can find in the country. It has everything to recommend it. It recreates in body, mind and soul.

In the past the American public has looked to public parks to fulfill the needs in this field. But the passing of much of our native woodlands, increased facilities for transportation found in the automobile and the increased complexities of social and economic structure are going to bring about one of two things. Either there must be a tremendous increase in parks or there must be a better utilization of the recreation resources of lands handled and designated as forests.

Technical foresters are probably more to blame than any other group for the idea that in order to get recreation from forested territory that area must be designated and handled as park land. There is no fundamental necessity for making any area park to get recreation from it.

Recreation from lands handled as forests can be as valuable per unit as from parks. But there must first be a recognition of this service as a fundamental product of the forests and second a well ordered program for making use of it. If there is reason for rural forested areas being termed parks and handled exclusively for recreation it lies in the inattention of the foresters with regard to this forest value.

It is very evident that the forester has not recognized either the fundamental need of outdoor recreation or the basic fact that forests are the areas that produce the necessity. Or if such recognition has been attained they have not been able to present a well formed program for handling this forest value or there would be no action such as now prevalent in trying to get areas of forest transformed into parks so the recreation resource can be made available. For if the forester did have a program outlined based on sound thought people would not feel a need for trying to get a new kind of administration or different handling to secure the recreation found in a forest which they demand.

The demand for outdoor recreation is basic. It is also fundamental that practically all of the recreation of broader rural landscapes demand the presence of trees. The demand for service to humans in this field is going to increase immensely. If the foresters cannot get to a point where they can confidently say that recreation resources of lands in forests are being handled in a rational progressive manner there is going to be a greatly increased demand for parks to serve the recreation needs. The demand for parks is not dead, because that demand is too well founded. Actually that demand is not for parks but for the recreation people believe will be developed in them.

But there will be no sound argument for taking extensive areas of lands now in forests or typical forest land and setting it aside to serve recreation alone as parks if the recreation resource is sanely developed in our forests. It is a matter of forest protection to develop this recreation resource. Great effort is placed in fire protection. Large sums and labor of considerable extent are expended in reforestation. Equal effort in getting a proper program and policy for recreational development of forested lands will save more genuine forest territory to the practice of forestry than present effort in either of these accepted lines of work. It is certain people are going to secure forest recreation and it is better that they secure it in areas that should be forests than in parks that should have remained forests.

Recreation to the present time has not had the analytical study from all sides that is necessary before basic policies can be established. There is need for digging into all of the phases of recreation production from lands handled as forests. No superficial consideration will suffice. Nor will evasion of the issue solve the problems involved. Sooner or later it must be faced.

It is my prediction that the State forest will finally be the most efficient recreation area owned by the people. A long process of evolution, of experimentation and learning by failures in State forest recreation development can be bridged by an earnest effort in thoughtful study at the present time.

The actual design of recreation serving systems in the forests is a field of landscape architecture and should be under the direction of a qualified landscape architect. But the administration and some other features are right in the hands of the technical forester in charge of the whole forest, and if improper or incompetent handling of this resource is chargeable to any one individual it will be to the forester. The entire responsibility is in their hands for practically no qualified landscape architects are now employed by forest organizations. The landscape men cannot be blamed if they have had little or nothing to do with recreation in forests. But there might be a genuine criticism of administrative foresters in charge of forest systems for not getting the best possible help in this work if they fail to get qualified landscape men on the job.

The whole answer to the recreation problem in forests is going to be solved by study, study and still more study. Some little time must be taken from the other phases of forest services to humanity through material production and be given to the one direct, universal personal service which people can get from their forest lands and that is recreation. Landscape architects can do much in this field, but there must be the best thought possible given to this field of forestry on the part of the men more interested in its other phases if the most desirable results are going to be accomplished.

Recreation is a necessity. It is a permanent fundamental human need. The demand is going to increase. It is a value present in every forested area regardless of status, name or administration. It is one of the most worth while services the forest can give to people. It is an annual "crop" of the forest. Citizens are going to get this recreation

from forested lands in some manner, and if not from areas handled as forests, then from areas under some other name anad handled so the recreation resource is utilized. The most sensible policy is to get just as much material production from the forests as feasible and still get a full return from the economic material values. The best possible thought and a considerable amount of it is needed on the problems involved in this human use, a service not directly dependent on a material substance produced, both by the best men in the forest work and by those men in the landscape profession who have studied the problems of fitting land surfaces to human service.

THE FUTURE OF NEW ENGLAND FORESTS[1]

By Austin Cary

U. S. Forest Service

What a man can say, that is worth while and of real guidance in respect to the future of the forests of New England, will depend, it seems to me, full more on those faculties and experiences that express themselves in feeling than on accurate and sufficient information.

The case stands this way with me: After long and wide wanderings New England is still the home country; further, I realize that it always will be so and I thank God for it. Other regions may be good to work in or to visit. When, however, I cross the border on return, confidence in men somehow springs up spontaneously, also a sense of security about things in general and the future. This feeling I have tested by reason as far as one can and I believe it rests on substantial facts.

To connect that with the specific occasion: My feeling for one thing is that those of us who speak here on broader topics and things yet in the future have no occasion and are not justified, whatever our experience and training, in taking the attitude that what we say is necessarily sound or right. Our part rather is to present things as we see them, for determination, if that is required, by the people at large. I have, however, a faith that is more positive and definite than that. Just as during the 30 years during which I have been identified with the forestry movement I never have found it in my heart to call my section or any large portion of its people wrongheaded or unduly slow to apprehend or act, so today my feeling toward the future is cheerful at least, if it should not be called confident. I believe it is in the people of New England to fix up this matter of forest productiveness in effective fashion if power to do so exists, or ever did exist, in any people. This also I believe—that they will do that as a result and on lines of their own initiative and thinking, paying regard to precedents only as far as they appeal to reason freshly and freely applied.

One or two topics that might be treated under the head assigned to me can be cut off here, as already disposed of sufficiently for the

[1] Address before New England Forestry Congress, Boston, Mass., December 27, 1922.

present purpose. Fire protection for forest land, general and equitably supported, it was inevitable that New England should take up as soon as its necessity was appreciated, and gain in efficiency in reasonable harmony with the demands of the times I think can be counted on as well. Forest taxation I shall treat just as briefly. Not at all minimizing either the importance or the difficulty of the matter, I mean simply to make clear that I consider the main condition for its adjustment is already in existence, awaiting only clear thinking by leaders, trial perhaps, and education, the inevitable price to pay in any such case. This matter does not stand at all as it would among a people lazy, improvident, not disposed to be fair, envious of those who get ahead. The traits named I am not indeed attaching wholesale to any people. I think I know, however, that their opposites are true of our own, and I consider that the fact furnishes the most essential favoring condition that could be named for reform or advance. Two of our States in fact have already testified on this head: Maine a dozen years ago turned squarely away from temptation, and Massachusetts with carefully studied legislation is today leading advance among all the States. For the future, therefore, I look for progress, as necessity develops, at a rate to be regarded as fairly satisfactory considering the circumstances.

I wish for the purposes of this paper to divide our forest area into two main divisions, a step that I think will serve to clear some matters in our thought. In the midst of our territory we have a good-sized area of one of the most useful and productive forest types in the whole country (white pine), so located also in relation to population and industry that its products can be realized on at a high rate. As I see it, rather intensive forestry management is now, and will continue to be, appropriate here.

In contrast to that are great areas of woodland in northern New England characterized by trees much slower growing, a forest also of strongly marked types, not easy to influence and guide. Compared with the forests of the pine type, it has natural producing capacity, perhaps, a fourth as much. Values are lower also by reason of situation, making it difficult every way to lay out really profitable productive work. The idea may be expressed by calling these areas woods rather than forests. As such we want to keep them reasonably productive (fire protection we have long recognized as an obligation, for instance), but detailed, elaborate forest management is not easy to justify. True, if we were

utterly dependent on that territory for forest supplies, it would be up to us to go at the problem no matter how difficult and force the region to render us sufficient for our needs at whatever cost. That course, however, I do not consider obligatory as things stand. Other resources that we possess, our neighborhood to Canada, and the connection, getting closer and less costly every year, with our own west coast, are grounds for that. Then recent personal experience enables me to contribute another idea.

For an understanding of that I wish for a moment to turn your thought to the South. Beginning at Chesapeake Bay and stretching in a belt 1,500 miles long to the line of prairie in Texas, reaching inland to the base of the mountains in some places and west of the Mississippi River into the State of Arkansas, in the southern pine belt so-called, a region of potential forest about five times as large as all New England, in comparison with which our white pine area is but a spot on the map. Rather sparsely populated as yet, though early settled on, vast areas are today either occupied by forest or available for that use. Tree species of the most serviceable kinds characterize it and, owing to soil and climate, timber on much of it grows several times as fast as that of our north woods, at a rate in fact that I suppose is not surpassed, for so large a territory, anywhere on the face of the earth. Here then is a resource awaiting appreciation and development, of vast importance not only to the South itself but to the country at large. To New Englanders, in my opinion, it means these two things: First, a field inviting enterprise in timber growing and the industries based on timber. Second, as we consider plans for producing timber locally, we must consider also the possibility of competition arising from that source.

An application I wish particularly to make is to our northern woods and paper industry. By all means let us maintain the productiveness of those woods as far as we readily and profitably can, and let us be thankful for the volume of industry, large as it is, that their production on that basis will support; further, we should be not only dull but remiss if we failed to take full advantage of the technical qualities of our spruce. Of intensive forestry, however, costly measure to promote production applied to forests of no greater natural capacity to produce than these, I doubt the wisdom until the suitability of southern woods for paper making and of the South to this form of manufacture has been fully sized up. This idea I think will be new to many here, but

I consider it one of great importance. New England, I said at the start, appreciates forest industry and I believe is going somehow to supply her needs for forest products. No less strongly do I believe, however, that it is prosperous, not crippled or subsidized, industry that suits her; also that she is going about this business of timber production in prudent fahion, with an eye steadily fixed on the relation between outlay and results.

I referred a little earlier to the forests of southern and central New England as inviting rather intensive forest management by reason of their neighborhood to popuulation and industry, their power of rapid growth, particularly because of the scale of values for their products that is now in force. Granting that and the need for greater supplies, it is an easy inference that New England should push production in this field strongly and at once. Further, the form and organization under which we shall do that becomes a matter of concern.

The stage here is clearly set for private enterprise; in fact it seems indisputable that, whatever we may say or do, very much the greater portion of whatever production is secured in this field for the next few decades will be secured under conditions of that sort. That being the case it is up to us to make the best of it. In that connection I may say at once that my own feeling is not only friendly but contains much of confidence, because such arrangements seem to me to suit the genius of our people and because I look for really significant results.

Here I think an idea somewhat different from the aspect in which these matters have been most commonly looked at will help us—the idea that if forest products are so essential as they are said and known to be, they are also worth the cost of their provision. Acceptance of that idea, it seems to me, will clear and simplify things vastly.

Within limits, those who feel especial concern at shrinking stocks of native timber and emphasize the necessity of providing for replacement have no quarrel with advance in price. It is inevitable in the first place; then, unless I am mistaken, the same thing is the most powerful factor in promoting both economy and production that could be named. Waste, destruction of young growth, disregard for reproduction, things often lamented in connection with the harvesting of our native timber, were necessarily involved in the fact that the commodity handled was valued at so low a price; on the other hand, as values have risen, we have seen some of those things disappear of themselves. This, as I

see it, goes with our scheme of handling things in a broad way. It has its conserving and productive, as well as its disappointing side. Here is the aspect of the matter that concerns us particularly today—the idea that as with depleted native supplies and sustained call for forest products a scale of prices is reached such that the value of those products will reward production by whatever means may be necessary to that end, the fact will be recognized, acted on, and individual initiative put out in the direction of timber growing prove a strong force in the field of supply.

In no section of the country better than New England can that idea be put to the test today. Here is the situation as some see it: For a number of years now our pine, perhaps some other woods of lower New England, have been bringing prices such that production by careful, designed, somewhat technical methods seems to promise abundant returns. Only destructive natural forces and heavy shipments of lumber of the right kinds from the Pacific Coast could in reasonable probability interfere with that. What then is resulting? This at least that I know about: Over and above the general care for timber long exercised by our people and its high appreciation by many as a personal resource, here and there a man, enthused with the idea of timber growing is committing himself more or less fully to the project and studying carefully every measure that can serve his end.

I could name a number but the names would be known to many; then the real question is not of the straws but of the direction and force of the wind. I myself am in general optimistic. The opportunity in the first place seems to me plain. Having in the 30 years past seen the men who pinned their faith on timber win out heavily for the most part, blaming themselves only that they did not look further ahead, for all I can see the stage is set today for similar success to those favorably located and properly equipped who act with promptness and judgment. If sound so far, the rest is up to Yankee shrewdness and energy. Conditions of success to be sure are different now from what they were formerly—it is production in large measure, not merely protection and holding, for which the circumstances call. Really alert and competent men understand that.

I think I see several lines of future development in this field. A territory in southwestern Maine that I know well is the basis of one such. It is occupied by men who get their current living on the land

by farming, but whose real economic substance and security rest on the timber they own—that today fully protected and highly valued, but capable probably of rendering 50 per cent heavier returns to the owner if a little technical information is applied. In the receptivity of these men I have as much confidence as in the solidity of their situation economically. It is desirable for all concerned, I take it, that they should be strengthened in their position, that technical information that will serve them should be brought to bear, that the area over which conditions of that kind are in force should be expanded as widely as possible. In this connection successful example, it seems clear, will be the most effective agent, but other means of guidance and stimulation are available. One that is not now familiar, but that I have long thought of as promising in some circumstances, is as follows: Men skilful in woods management and of business ability as well, one to a county or group of towns, who should finance timber operation for the farmer, market his product, and at the same time guide him in the management of his wooded land. That would be good business for the man, and it would be good for the country; I don't see why it shouldn't work today if the right men went into it. Then another specific case of timber growing, well established but with somewhat different organization for marketing, has been brought to light in connection with this meeting. In the region of Plymouth, Mass., it is told us, are hundreds of timber-growing farmers, small mills making boxes for the shoe and cranberry industries serving as outlet for their product, the business satisfactory to all concerned and, though unconsciously, on a sustained yield basis today.

Second, I look for timber growing on a larger scale by the wood-using industry, the wealthy landowner, by men associated in corporations for that purpose perhaps. The beginnings of this we have already, and I myself look for its greatly enlarged development. I feel, however, that I must enter a caution here in respect to standards of judgment that might be applied. Some occupying the technical standpoint seem to think that nothing worth while is accomplished unless a complete technical program is adopted—elaborate plans, an indefinite future fully provided for, all land kept bearing the utmost of which it is capable. That I believe a mistake, in respect to policy certainly, usually as a matter of business that is sound and can endure. Timber actually grown to maintain our industries and through them supply the needs of our people is what the public is concerned for. If the industries

themselves or those in like circumstances are to do that they will have to do it under existing limitations, financial and other, working out their purpose in the conditions in which they are actually placed. Viewed from that standpoint, some land doubtless will prove to be too hard to keep bearing generously; the distant, ultimate use of land, men will not feel either able or called on to decide; the measures they will choose to carry out their ends will be the cheapest and simplest that they think will serve. Here, on the other hand, is an outline of development, all of whose stages may be found illustrated among us, and which it seems to me should be heartily welcomed for the possibilities it contains: A wood-using industry that buys its supplies on the market as long as that appears good business policy and may readily be done, that acquires timber land in the first instance, perhaps, to provide against pinches and keep prices reasonable, that goes in heavier progressively when opportunity offers or prudence dictates, and its circumstances allow; a concern fair and liberal in all relations, and therefore appreciated; alert and progressive in the treatment of its land as in every other branch of its affairs. We have a good deal of that sort of thing with us already.

It seems well to repeat what was said at the beginning, that I have not set myself the task of imagining an ideal future for New England forests based on theory and precedent, and urging that. What I have tried to do is to think out the course affairs promise to take under the play of forces in the field. From that standpoint, it was inevitable that one should begin with timber growing under private ownership. Then the topics interests and attracts me; I think the business should suit our people when they understand it; I look on this also as not only a powerful but the quickest-acting available force. If all this is correct, therefore, and indeed by reason of facts that no one disputes, it is desirable every way that this force should be recognized when encountered, given cooperation, as that may be needed, accorded a fair chance to perform its work.

It would, however, be a fair question, should anyone care to put it, how far development along the lines thus far suggested promises to supply the future timber needs of New England. To that I must answer frankly that I do not know; nor do I think it possible in such a matter either to know or to estimate with any degree of accuracy, considering the many indeterminate elements in the case. This indeed

seems more worth while than debate on such a point—to set all available productive forces into operation—for that there is ample field for all of these that promise to get to bear is my firm belief. Back of that belief, I think, is not so much the statistics and predictions current as the course of affairs as I have myself witnessed it in the past 30 years. As for private management of timber land, I am ready enough to admit that it has distinct limitations when looked at as a productive force.

To those who look more naturally and expectantly to public ownership and management of forest I would say this first and throughout—that I am in entire sympathy with that as far as the people of New England in their wisdom and position of final arbiter of such questions will support it. I believe, in fact, that New England will sometime build largely in this direction, though confessing uncertainty as to time and rate and exactly what will be the moving stimuli. What has served France and Switzerland so well is none too good for us. In this direction I have too the same cheering and stimulative feeling as before that obligation is not the only thing involved here, but that for every timely and well judged enterprise that may be undertaken we can look for really rewarding and satisfactory results.

The town forest in particular appeals to me; my town has one, by the way, and there are some 20,000 trees growing on it that I planted. I would like to see it extended and the same idea taken up by other Maine towns and those in other States. Our fellow-citizens are thrifty enough, in public as well as private capacity, so that when it comes to disposing of timber they won't give theirs away, but will sell at the market price.

There is land, we all know, in considerable volume unattractive to private ownership for any use, that never will produce much except in public hands, but capable if so owned and managed of producing timber at an economic price. That perhaps points to the most productive and desirable field for public forest management; yet all of us, I suppose, wish to see the public, to the extent that it goes into the business, make the best trades and the most profitable investments it can.

To State forests, if things work out that way, my hospitality is the same. That leads up to the big enterprise entered on by Massachusetts two years ago—$3,000,000 devoted to acquisition and putting in productive condition of not less than 100,000 acres of State forest. This

action to the best of my judgment was timely, needed, every way worthy of this great and progressive State; one of the best features about it is that the project was put in the hands of capable, level-headed men to work out. So begun, and carried on in like fashion, the enterprise and what may grow out of it ought to prove of vast future benefit and satisfaction to the State.

In another way and a larger field I can perhaps encourage and promote the movement for public forests, by stating the belief that good opportunities for realizing it promise long to exist. The field I am thinking of is the great area of spruce and hardwood land in northern New England. The States sold these lands many years ago for a pittance and for long it has been customary to lament that fact. I have not myself been so clear about that, especially of late years—I mean as respects results to date—but this I do think—that opportunity is open to the public, if it wishes, to fix this matter up on the other basis, and that on terms not too onerous, that should, in fact, prove satisfactory in the long run. That involves settled policy, steady watch for opportunity, provision of funds, organization thoroughly competent for its work. We have today among us the beginnings of such a movement, in the National Forest. In favor of large extension of public ownership as a matter of distant, final adjustment, I see these two things: First, the probability that those forests under private ownership and when the native timber has been cut, owing to their slow-growing character, will yield little in the way of timber of the larger sizes; second, there is the experience of mankind at large.

In this connection I wish to mention an idea that I heard formulated quite a number of years ago and that at the time and since has appealed to me as desirable and sound cooperation in enterprise of this character among the New England States. At the first conference of Governors and their representatives called by President Roosevelt in 1908, Mr. Root, then Secretary of War, to whose standing as a publicist there is no need to refer, made the suggestion that the best way to handle some of the larger projects of conservation might be through associations of the States. To that there was no legal obstacle, he said.

For such cooperation no better or more promising field could be chosen than New England. We are in a corner of the country by ourselves. Our whole territory is smaller in area than that of some single States. The products of the different ones come to common markets;

Massachusetts and Connecticut pass on the waters originating in Vermont and New Hampshire, and Mt. Katahdin is as much a subject of pride to Massachusetts as to Maine. Then we are people like in every way, who understand one another, while among us we have the wealth, the ability, and the public spirit to carry out any public enterprise on which we set our hearts. As far as I can see, no obstacles except custom and habit stands in the way of carrying out on that basis major projects of conservation on whose desirability we may agree.

A PROPOSED TAX LAW FOR NEW YORK STATE[1]

By C. R. Pettis

Superintendent State Forests, New York Conservation Commission

The question of forest taxation has been discussed and considered as generally as any other forestry question. There has likewise been a great deal of legislation and other efforts put forth to get a working forest taxation law.

In New York State we have had three such laws since 1912. They are so intricate in red tape and practical working that they do not accomplish the purpose intended. From what I can learn the result has been similar in other States.

The failure of these laws is not only due to red tape, but I believe is due primarily to the fact that they are fundamentally wrong in their basic principle.

In my opinion, the fundamental question is: First, that of assessment of the property, and

Secondly, that the forest lands should be assessed upon the same principle as farm lands. Farm lands are based upon a valuation, taking into consideration location, productivity, etc., but on the other hand, the growing or grown crops on a farm are not assessed and the assessed valuation of the farm in succeeding years is not determined by adding the value of the crops produced in succeeding years to a previous assessed valuation, while on the other hand this principle is more or less applied to forest lands.

Therefore, the thing to do, as a matter of equity, is to frame our law in such a way that the growing forest crops will not be considered in making assessment any more than the farm crop is.

The wording of the law involves some difficulties. For example, we have orchards, a piece of land with a fine productive orchard, in full bearing, is far more valuable than the same lands without the orchard, but on the other hand, an orchard tree is not comparable to a forest tree, for the purpose of assessment. The orchard tree is not a crop. The apple tree is a producer of a crop. The apple orchard is an improvement to the land and the fruit grown should be treated as the crop. On the other hand, the forest trees themselves are the crop.

[1] Delivered before the annual meeting of the Society at Boston, Dec. 29, 1922.

Whatever is done in the law should be similar. It should be so similar, if possible, that there is nothing to be done except to correct the present system and have the assessments made upon a similar basis of equity.

In New York State, our tax law, section 6, provides:

"All real and personal property subject to taxation shall be assessed at the full value thereof, etc."

Sub-division 3, of Section 2, entitled definitions, defines what the real property includes. It reads as follows:

"The terms 'land,' 'real estate,' and 'real property' as used in this chapter, includes the land itself above and under water and all buildings, articles, structures, etc. . . . all trees and underwood growing upon land and all mines, minerals, quarries, and fossils in and under the same, except mines belonging to the State."

From the previous definition you will see that trees and underwood are at present assessable and the law requires that property shall be assessed at the full value. If we insert just six words, and these words to be *except natural or planted forest growth*, we will then change the law and except the growing wood crop from assessment and apply the same principle as is applied to agricultural crops and we believe accomplish our purpose.

This will mean that the forest lands shall be assessed at a value of the soil only. In New York State the assessors are required to compile their roll and advertise when the same may be examined and if any owner has a grievance as to the rate of his assessment he may present the same and if the assessors fail to do what, in his opinion, should be done he has a right of review by the courts. In this way we are establishing an equitable principle. We have no red tape, registration formalities of any kind to go through—the practice is simple and I believe the purpose will be fully accomplished.

COMMENT

By L. S. Murphy:

Mr. Pettis in presenting for discussion the contention that the forest crop like the farm crop should be exempted from taxation and only the land on which it grows be taxed "upon a valuation taking into account its location, productivity, etc.," is performing a real service to the forest tax movement. This single issue is one meriting a very full and frank

discussion which it is hoped it may receive. I shall here only attempt to touch a few of the high points of the question.

There is, it seems to me, a fallacy in the assumption that the tax on the value of the land that supports the farm crop is the only tax chargeable against the production of the crop. As a matter of fact are not all taxes paid upon the productive values of the farm, as distinguished from the residential values, a charge against farm crop production? Such taxes in addition to those upon the land comprise those upon the tools, farm animals or tractors and other machinery, implements and equipment necessary in planting, cultivating, and harvesting, together with those upon the buildings needed for housing the work animals and general farm equipment. Where fruit raising is involved taxes on the orchard trees or vines must be added. Dairying requires the addition of taxes paid upon the dairy herd and equipment. Similarly for stock raising. In all these cases the product itself is exempt from taxation but the elements of production are nevertheless taxed and these taxes must be paid out of the price received from the sale of the product.

Of all farm production activities livestock production most nearly resembles forest production, not because either is essentially or fundamentally different from the rest but because the annual yield or increment in these cases is not a differentiated product, nor is it subject to deterioration. It thus lives on and becomes a part of the parent stock losing its identity as an increment unless systematically disposed of at regular intervals.

If all of our forest property was on an organized production basis so that the increment, or its equivalent, could be regularly removed there would be no serious forest tax problem. Under such a regime, with a forest property producing an annual increment having a value equal to 5 per cent of the combined value of the land and growing stock and being cut over annually for such increment, a tax of 1 per cent levied upon the value of the land and growing stock would absorb exactly the same proportion of the value of the yield as would a 20 per cent tax levied directly upon the value of the yield, namely, one-fifth.

Obviously, the tax levied upon the yield would be no more a tax upon the crop, i.e., the increment, than the one levied upon the value of the land and growing stock, which tax in turn is directly comparable to the taxes borne by the ordinary run of agricultural production

where the crop itself is apparently exempted from taxation. The actual exemption of the agricultural crop is really only an exemption from a direct levy and is intended to prevent double taxation of agricultural production.

The question then comes, why not follow the same plan with forest production? It could be. We would, however, get into considerable difficulty separating the increment from the growing stock and evaluating the latter for taxation especially with our present unorganized forests. Furthermore, such forests as are subsequently organized on a periodic yield basis would present similar difficulties.

The change of the incidence of taxation from the capital value of the forest property to the value of the yield with a corresponding change in the rate of tax is merely a device of convenience to get around that difficulty. It assumes, of course, that to produce the cut made at any given time, or successive cuts made at given intervals of time, there must have been a corresponding amount of capital value in land and growing stock which could have been taxed to yield a like amount of revenue.

The change of incidence is likewise a device to allow our at present depleted forest growing stock to be restored to a normal production basis without being burdened by annual taxes and interest charges during the non-productive interval. Incidentally, it eliminates the possibility of a slaughter of the existing growing stock to escape taxes.

To the extent that the amount of growing stock necessary to keep up production is impaired by too heavy cutting and failure to reforest, the yield tax would become a progressively punitive tax upon such operations. Thus the adoption of the yield tax by both encouraging the building up of a normal growing stock, while at the same time discouraging its depletion, would afford a wholesome and justifiable means of vitally influencing forest practice for the better.

The attempt to bring forest taxation to an issue on the basis of the proposed crop exemption plan would be, to my mind, to invite certain defeat in most of the States outside of New York. I assume Mr. Pettis has canvassed the situation there and has satisfied himself that he can get by with it. It is almost unthinkable, for instance, that we could by such means wipe the tax roll clean of the vast amount of taxable value which now stands against the forest growth in many States. Even the "dirt" farmer, with all his political prestige, could hardly hope to pull off any such tax exemption coup.

This brings up a second fallacy in Mr. Pettis' paper. As I see it, the fact that a State has an income tax which everyone must pay is beside the point. The farmer, after having paid his property taxes must pay an income tax if he has an income. So must the merchant, the manufacturers, the banker and others. The income tax is a tax in addition to and not in lieu of the property tax. To say, therefore, that "the timberland owner will not escape taxation by having his timber exempted from the property tax for he will have to pay an income tax when he cuts any of his timber" is much like saying that "a child by escaping having scarlet fever will not escape having his share of other children's diseases." True, but he has escaped that one. Unless the income tax law in such States as New York was to be amended so that the income from forestry would be taxed in addition to the normal income tax, the equivalent of the general property tax from which it had been exempted the timberland owner would be beating the tax game by that much.

In order that what I have just said may not be misunderstood, let me say frankly that I favor the elimination of all property as well as other taxes, leaving only a tax upon the market value of land,—the single tax. Until the benefits of the single tax can be made available to a like extent, whether in whole or in part, to all productive enterprise, I see no occasion for making these benefits available to forest production. Indeed, the attempt to do so means almost certainly that needed tax relief for forest production would be delayed, how long no one knows, but at least until the whole single tax program can be justified and enacted into law.

We must, in my judgment, keep our feet on the ground in this matter. Forest taxation is not a cure for all the ills of forestry. It is merely a means of adjusting and fitting the existing general tax burden to forest property. The hue and cry of forest owners, as distinct from all other property owners, is not against taxes per se but against the injustices, inequalities and uncertainties of the future which are inherent in the property tax as at present applied. Timber property with some exceptions is not overburdened by taxes but only by tax psychology. Some timberland indeed is not paying enough tax while others are paying too much. An equalization of burden is one of the things most clearly indicated as needed in the taxation field, equalization both as between classes of property, timber and others, and then as between individual properties within each class. It is a real order to work out these adjustments, too, and so far as I have been able to see there is no six-word royal road to their attainment.

FOREST FIRE INSURANCE POSSIBILITIES IN THE NORTHEAST[1]

By L. S. Murphy

Forest Economist, Forest Service

Forest growing, like fruit growing, potato growing, and wheat growing, is a business as well as an art and science. There is, furthermore, no doubt but that the business of forest growing is actually established in this country. It centers at present, according to a recent inquiry, in the Northeast—from Maryland north and Ohio east—where is located 75 per cent of the total of 10,000,000 acres of land throughout the country actually devoted in some measure to timber growing.

There are certain facilities commonly available to and underlying the successful and profitable outcome of all sound business undertakings —reasonable protection against fire and other depredations, fair and equable taxation and credit accommodations, and insurance against unavoidable loss from various causes being the principal ones. Not all business waits for these facilities to be provided before getting under way. Nevertheless, business in general is stimulated, broadened, and stabilized with their establishment.

Reasonably good and in some localities excellent fire protection is already afforded forest property in New England as well as protection against the insect and fungus enemies of the forest. Fair and equable taxation has also received attention, and while fully adequate and satisfactory means may not yet have been developed, these nevertheless are receiving careful consideration. Nor has the need for forest insurance gone wholly unrecognized. Indeed, the first forest fire insurance company was organized in New Hampshire some five years ago. To many the passing of that company, after a brief period of activity, indicated failure through lack of demand for that class of insurance. That is hardly true. The organizers of that company were busy men who, conscious of the needs and demand for that service, undertook to organize and give it form and at the same time establish the working principle. They were not insurance men nor interested in the business of insurance as such.

[1] Read before the meeting of the Society of American Foresters, at Boston, Mass., December 29, 1922.

In turning the business over to trained insurance men they had hoped to see the principle grow and thrive. Hard and aggressive work was, however, necessary to put the business on its feet. This required both interest in the forests as well as in insurance. The first of these was undoubtedly lacking and the thing now hovers between life and death. Forest insurance is still available, to be sure, to those who can pay the price. The price is such, however, that no timberland owner would think of taking out a policy purely for insurance protection. He resorts to it only in a pinch to cover some financial transaction involving his forest property.

As I have come in contact with the situation from time to time it has seemed to me something might now very well and profitably be done about getting the project on its feet again. Time and time again in talking with the larger owners especially, they have expressed the feeling that while they were doing something and were willing to do more, there was still too much risk for them to invest much money in forestry without their being able to insure that investment.

How many timberland owners feel the same way I do not know. It may be just another excuse for stalling along and doing nothing in some cases, at least. We do know, though, that many companies are carrying insurance on their pulp logs and cordwood in the woods. They have been able to get this much out of the insurance companies as a more or less logical extension of the coverage on their log piles at the mill. This extension, by the way, has placed the insurance companies in a most inconsistent position, it seems to me, as regards their refusal to write on standing timber. In the event of a forest fire the felled product in the woods is obviously in very much greater danger of being totally destroyed than is the standing timber.

There are several lines of action that suggest themselves as desirable to pursue in connection with this subject. First of all, the insurance people have got to be educated. They have got to be made to realize that there is a part—a patriotic part, if you will—for them to play in the conservation of the country's timber supply. They have got to be made to realize that here in New England, at any rate, we have sufficient fire protection facilities to at least prevent the development of such forest fire catastrophies as occur elsewhere in the country which they think representative of forest conditions everywhere. Here, then, is a suitable territory to inaugurate forest fire insurance and work out

its details. Finally, they have got to be made aware that there is a demand even now for insurance at a fair price.

It behooves all of us to keep these things in mind. Include insurance men in our meetings, particularly our fire protection meetings, and give them something to say. Get fire protection and forest conservation material into their journals. Develop a cooperative relationship between our State forestry and insurance and fire marshals' departments. Have interested timberland owners take up the question through their local insurance agencies, making sure that these agencies carry the thing through to the home offices of their companies, so that those who direct the insurance business may sense the pressure of demand.

Finally, it must not be overlooked that forest insurance, once it is earnestly undertaken, will develop into a valuable ally in fire protection. The companies obviously will want to see their risks as well protected as possible. They will most likely develop special protective facilities of inspection and the like to formulate and carry out recommendations for better individual preventive and control methods.

On the side of the insured, with lower rates available, as they would be, where slash was properly handled, for example, we should certainly expect a reduction of the slash hazard on individual insured holdings and with it a growing sentiment in support of compulsory control legislation on the subject. This is but one instance of what might very well be looked for as an indirect result of cultivating the insurance idea among the great body of timberland owners.

The present, at least, is not the time for foresters to get in and develop the insurance end of the game. Our job now is to beat the brush and bring the insurance men and timberland owners together. If stock insurance interests fail to respond, the mutual companies or forest insurance linked up with fire protection under the State forestry departments offer a way out.

FIRE DAMAGE CLAIMS ON NEW ENGLAND ESTATES[1]

By Theodore S. Woolsey, Jr.

Consulting Forester

Given Conditions: Estate of 1,000 acres near Stamford, Connecticut. Woodland 500 acres, average cost and appraisal value $100 per acre. Fire set by a railroad completely destroyed (case (*a*)) 50 acres of unmerchantable sprouts 20 years old and case (*b*) 10 acres of 60-year old white pine, case (*c*) 100 acres of 50-year hardwood one-half destroyed and case (*d*) 20 acres lightly burned. The 500 acres of farmland and field escaped injury.

Problem: What damages should be claimed?

Especially in the vicinity of large New England cities, the value of mediocre forest land suitable for estate purposes has reached values of from $50 to $100 an acre. Occasionally, land has been sold for $200 an acre which in the back woods of Connecticut would be difficult to sell for $5 or $6. This is non-agricultural land which will be of no value for any sort of farming or orcharding.

When burned or cut over, the value of the land for estate purposes is greatly diminished or entirely destroyed. Under these conditions the question arises how to value the total or partial destruction of the forest crop.

The forester has been taught to estimate *when* the forest crop will be mature, approximate its *future sale value* and *discount its value to the present time.* For example, let us assume that a mediocre woodland will produce $60 worth of product in 60 years; then by discounting the future sale value of $60 at 4 per cent compound interest gives us a present value or damage claim of $10.27 for a 15-year-old stand. When we consider that the estate owner may have paid $100 an acre for the land as *forest in being,* such a compensation for the total destruction of the crop, 15 years old, is obviously too small. Some other measure of damages must be used.

The legal aspects of the case in Connecticut are as follows when the fire is set by a railroad:

Section 3785 of the Revised Statutes upon which a claim must be based provides that when property is injured by fire communicated by

[1]Presented at the annual meeting of the Society at Boston, December 30, 1922.

an engine of a railroad company, such company shall be held responsible in damages to the extent of such injury to the person so injured. (In the case under consideration we have assumed the injury consisted in the damage and destruction of a large number of trees.) Now the object of awarding damages in all causes of civil injury is to give compensation for pecuniary losses. Compensation is the proper test and the injured party is entitled to recover such damages as will compensate him for the injury received so far as it might reasonably have been expected to follow from the circumstances, according to experience and the natural order of cause and effect. The measure of the compensation in the case of the damage and destruction to trees in Connecticut appears to be the difference in the value of the land to which the trees are appurtenant before and after the wrongful act. In determining the value of trees to land, the controlling element is not the temporary use of the land but the real purpose for which the land is available and valuable and it also seems to me that in considering the question as to the value of the trees to the land, we must keep in mind that all of the property owned by an estate must be considered as an entirety and we must consider the effect upon the value of all of the land for the purposes for which it is available and to be used of the destruction of the trees on a part of the land.

How then are we to determine the difference in value of the land before and after the destruction of the trees? I believe that this difference in value falls into two general classes, to wit: the difference in the value of the land upon which the trees stood and the difference in value of the land which was not touched by the fire. Because the estate owner has the right to enjoy his property intact and because the land was valuable to it almost entirely for the trees which stood upon it and because it would seek to repair the damage done by the railroad by putting this land back into trees, I think that the true measure of the damage is the pecuniary loss entailed upon it in doing this very thing. Or, in other words, the difference in value of the land before and after the fire is determined by subtracting from the value of the land before the fire the cost of taking it in the condition in which the fire left it and restoring it to its previous condition. Such a measure, it seems to me, more nearly achieves the object of compensation than any other, but it would be difficult in an appraisal to give due weight to the time element when the "forest in being" is being raised.

Now what are the expenses which would fall upon an estate owner immediately after a fire in seeking to restore the land to the condition that it was in before the fire, and where this is not possible or practical, what is the resultant damage? The first thing that would be necessary would be to determine the damage to all the trees. This damage would be either partial, and would leave the tree living but impaired in value, or the damage would be complete, resulting in the total destruction of the tree. The first element of damage, therefore, is to compensate the owner for the net damage done to partially injured trees. Where an entire stand is only partially injured, what effect would there be on the external value of the trees? Would the area as a whole or in part be less valuable for estate purposes? Inasmuch as it is necessary to replace the dead trees, the next step would be to cut down the destroyed trees. The cost of cutting down these trees, and the value of the trees before the fire are necessarily elements of damage because the loss devolves upon the owner. Where these trees are salable, the railroad should be credited with the net proceeds. Where they had no salable value, there is no credit. There is a quantity, also, of underbrush which has been destroyed. This being unsightly for the purposes for which the land was bought and also detrimental to the forest value, it would likewise have to be cut down and this also is an element of damage. Having cut down all trees which were killed and all underbrush which was killed, the brush and debris must be cleaned up. The next step is the reforesting of the trees destroyed. This is an expense which would likewise fall upon the owner and is a proper element of damage. The estate owner would then have to wait until these trees grew to the age at which the other trees were destroyed. Until the second crop of trees had reached this age, the owner would not be fully compensated because he was entitled prior to the injury to the enjoyment of the trees which constituted a forest in being valuable for estate purposes. The discounted cost, therefore, of carrying the land to the several periods of maturity is also an element of damage. Where only a part of a section must be reforested, the carrying charge should be prorated accordingly. If, therefore, the owner is reimbursed for the damage to the living trees, the cost of cutting down the dead trees and underbrush and net loss on salable wood, and of clearing the land and of replanting other trees and *in addition* is reimbursed for the cost of carrying the investment, he would be com-

pensated for the injury done him as nearly as it is possible to do so. While these trees are growing, the owner has been deprived of the use of his pleasure forest as it was on the day of the injury and it might seem as though this also were an element of damage. This is really not a puzzle but a case of eating your pie and wanting it too. If the owner is paid in cash for the value of these trees to the land, at the date of their destruction, this is all that he can hope for because it is complete compensation. This can be illustrated by taking the case of a single shade tree. I have a beautiful elm tree in front of my house which I say to mysef I would not cut down for anything. That is because I, myself, derive a great deal of pleasure from looking at it. So would any owner of estate forest land. But, nevertheless, some one does cut it down. What was its value to me at the time of its cutting? The only way I can express this is by saying that, if I sold the land without the tree, it would be worth so many dollars less, since the pleasure which the purchaser would have in looking at the tree and receiving its shade during the time that he owned the property would be gone. If, therefore, he is deprived of its use during his ownership of the property, he is willing to pay so many dollars less for the property and what he is willing to pay less for this loss of pleasure represents the value in dollars and cents of the tree to the land. The same principle is applicable in the loss of forest trees. The confusing element is that in computing the damages as of the date of fire, we employ as one means of determining this the time required to grow these trees but we cannot be paid for the full value of the trees and enjoy them, too, and although we would not have sold them or cut them down, nevertheless inasmuch as they have been destroyed and inasmuch as they had a definite value at the time of their purchase far and above their value for lumber, if this value is paid, we cannot have the use of the trees too.

In considering the logical solution to this technical and legal problem, let us visualize the four classes of damage already enumerated: (*a*) total destruction of unmerchantable cordwood, (*b*) total destructionable of merchantable timber, (*c*) partial (one-half) destruction of merchantable timber, and (*d*) light damage to a merchantable stand.

In case (*a*) where the stand is unmerchantable, let us assume for purposes of illustration that the owner paid $100 for the land and forest, that the unmerchantable stand destroyed was 15 years of age,

that the taxes for 15 years with 4 per cent compound interest will amount to $6 and that it will cost $20 to clear off the burned brush, obviously an eye-sore. We will then have a damage claim made up as follows:

Carrying charges for 15 years at 4 per cent compound interest on the cost of land, $100	$80.09
Taxes for 15 years with 4 per cent compounded	6.00
Total	$86.09

This $86.09 discounted at 4 per cent compound interest equals $47.80 [2] at the present time. To this must be added the cost of clearing the burned timber, ($47.80 + $20.00) making a total of $67.80 due the owner.

In other words, to put the land in approximately its original condition (replacement method) and to compensate the owner for the loss of the enjoyment of the stand which was in being at the time of the fire, we would have a damage claim very materially more than the expectation value (which we have figured as $10.27) based on forest producing capacity. Is this unreasonable?

Using 6 per cent simple interest might be more likely to find favor with a court and would differ somewhat from the answer obtained by using 4 per cent compound interest. This lower rate is currently used in forest calculations while the higher rate (*at simple interest*) is often applied in civil damage suits. But the profession should adhere to the intelligent use of compound interest.

The damage may be arrived at by a different method. *If the estate must be abandoned* because of the fire, it might be valued as a whole in its damaged condition. This appraised value *after the fire* may be subtracted from the purchase price or appraised value at the time of the fire. The difference is the possible damage claim against the parties who caused the destruction of the timber. In arriving at values per acre such improvements as houses, etc., should be subtracted. Even if the estate can still be used, this appraisal method may be employed as an alternative, but it appears that the accurate appraisal presents a good many difficulties. The opposing counsel can also in-

[2] Prof. Chapman has called my attention to the fact that this is really an "Estate Expectation Value." The burned estate land will be worth $100 in 15 years. Discounting $100 at 4 per cent to the present time equals 44.47 which added to 3.33 (the disc. value of $6 taxes) equals $47.80 an identical figure with that given above.

troduce appraisal evidence, which might result in a weak compromise because of the lack of a tangible basis for the appraisal after the fire.

Assuming, however, that the estate can still be used, let us consider (*b*) where *merchantable* timber is totally destroyed.

The first step would be to salvage the merchantable pine which we will assume is ripe for cutting. If the estate were being managed merely to produce timber the answer would be simple—the net loss to the merchantable timber. But suppose the timber was virtually a park near the owner's residence. We would find the stumpage value of the pine perhaps $500 per acre or 5 times the *average* purchase value. In such a case probably the measure of damages would be:

Loss in stumpage value say $3 per thousand feet on 50 M, or	$150.00
Brush disposal and clean-up at $1 per M	50.00
Replanting (since the owner is entitled to a forest in being)	20.00
Total per acre	$220.00

The cost of carrying the investment until a forest in being was again secured might be added. Were we to add carrying charges for 60 years, the net profit of salvaging the former stand might be deducted from the carrying charge. There must either be compensation or replacement, but not both. In such a case the figures might work out as follows:

Value of land and timber, $540; deduct $450 for net salvage value of timber leaving $90 as net land value	
$90 at 4 per cent compound interest for 60 years	$862.76
Taxes at 4 per cent compound interest for 60 years	100.00
Total	$962.76
$962.76 discounted today at 4 per cent	$91.56
To this must be added the cost of brush disposal ($50) and replanting ($20), or	70.00
	$161.56

This represents the net loss to the owner.

Such a solution would probably necessitate a separate appraisal of the pine tract instead of averaging the value of the entire estate.

In case (*c*) where the stand is one-half destroyed, we will have a forest in being. There the damages would certainly be the net loss in stumpage value, the damage to the remaining stand, the cost of clean up and necessary replanting of openings. A similar solution would hold for case (*d*) where there is only a light burn.

The average lawyer might prefer basing his suit for recovery on the difference between the cost before the fire and the appraised value after the fire. But here there is an element of danger if the estate is to be maintained and repaired in that the appraisal of the effect of the burns would be difficult to substantiate and prove. The railroad which caused the fire could get just as many experts as the owner—thus resulting in a compromise. What the owner really would do is to repair the damage. This is an exceedingly expensive operation and he should recover the costs. Since the owner must carry the land without enjoying it, surely he must be repaid his carrying charges.

Probably the current practice in assessing damage of this kind is to use the method of subtracting the present appraised value after the damage was done from the original cost price. But where only a portion of the estate was burned, and the fire does not affect the estate as a whole and where the owner can enjoy its use as a whole, the method suggested (replacement costs with interest on carrying charges) appears logical and practical.

If any of the profession in New England, where such intensive conditions exists, have had experience along this line, the writer will be glad to have a criticism of the policy involved in this method of settlement, since so far as known it has never been tried out in the courts.

WHAT THE NORTHEASTERN FOREST EXPERIMENT STATION SHOULD AIM AT[1]

By Samuel T. Dana

Forest Commissioner, State of Maine

Forest Research is no novelty in the Northeast. Harvard, Yale, and other forest schools, and to a smaller extent certain States and private owners, have for many years been developing the basic facts necessary to place forest management on a more secure foundation. Their efforts have, however, been inadequate and practically uncorrelated. What the Northeast needs is an agency which can help to coordinate the work now under way and can itself conduct research in fields and on problems not already covered.

This should be the aim of the Northeastern forest experiment station. No single agency can hope by itself to handle all of the problems crying for solution. The more agencies there are at work in the field of forest research, the more rapid will be the progress made toward better forest management, provided these agencies work in the closest cooperation with each other. The Federal forest experiment station is the logical organization to bring about such cooperation. Unrestricted in its activities by State lines or institutional limitations, it should become the center for forest research in the Northeast. In addition to conducting investigations on its own initiative and with its own staff, it should stimulate and coordinate studies by other agencies as an integral part of its program.

Looked at from this point of view, the first activity of the experiment station should be to review thoroughly the results already accomplished and investigations now under way. This will be no small task, and will be all the more difficult because of the many agencies involved and the scattered character of the work so far done. It will require many contacts and much careful digging to determine just what information is already available. A preliminary survey of this sort is, however, essential to enable the station to function effectively. Its results will show for the first time just how much or how little we know and how much still remains to be done.

[1] Presented at the annual meeting of the Society at Boston, December 29, 1922.

After the survey has been completed, I believe that the director of the experiment station should call a conference of all organizations and individuals who are or ought to be interested in forest research. This conference should review thoroughly the situation brought out by the survey and formulate plans for further action. Certain problems will undoubtedly stand out as pre-eminently in need of immediate study, while others, though important, will obviously be less pressing. Certain organizations or individuals will also be in a better position than others to undertake work along specific lines. In some instances, it may be that the same problem or different phases of the same problem can be studied to advantage by more than one agency. The object of the conference should be to outline a comprehensive program of forest research in which problems of primary importance will receive first consideration, and in which each agency will undertake the specific tasks for which it is best fitted.

Personally, I believe that at the outset at least the recommendations of such a conference should be advisory rather than mandatory in character. While its recommendations would naturally carry great weight, I doubt whether it would be desirable, even if possible, to attempt at this time to make them absolutely binding. More rapid and more harmonious progress is likely to be made if the first conference does not assume too much authority, but contents itself with outlining a comprehensive program in which each agency will voluntarily play the part for which it is best fitted. Similar conferences should be held periodically, perhaps once a year, to discuss progress and to plan for further work. If developments indicate the advisability of creating a more formal and more authoritative investigative council, there would obviously be no objection to this course.

The forest experiment station itself should for the most part take up problems which are interstate in character, and which are not being or are not likely to be adequately studied in the near future by any other agency. It may perhaps be rash, before the results of the proposed survey are known, to predict what problems will fall into this category. At the same time, certain facts seem reasonably clear. For example, we know that far more attention had been given to intensive studies of white pine by the Harvard and Yale forest schools and other agencies than to the management of the spruce, fir, and mixed hardwood forests of the northern part of the region. Does not this indicate that the experiment station is likely at the outset to find its greatest useful-

ness in the study of problems connected with the management of the north woods.

Take, for example, the large areas of birch, beech, and maple which, under present conditions, are being comparatively little utilized. Much of this timber is already mature or over mature, and if not utilized promptly will deteriorate steadily in value. Moreover, present methods of cutting by removing practically all of the softwood and leaving practically all of the hardwood, are inevitably resulting in an increase in the amount of the latter at the expense of the former, The present tendency therefore is to supplant the valuable spruce, on which the pulp and paper industry, the leading industry of the region, is primarily based, by the less valuable hardwoods. It is urgent that a thoroughgoing study of this situation be made with a view to securing utilization of the hardwoods and the maintenance of as much spruce as possible in the new stands following cutting.

Many other important problems also present themselves for solution. What methods of cutting should be used in stands of pure spruce and mixed softwoods to secure the most satisfactory reproduction? Taking everything into consideration, what is the most satisfactory method of handling slash, both from the standpoint of reproduction and of protection from fire, insects, and disease? What are the best methods of studying growth in the north woods, and how does present growth compare with the drain on the forests from cuttings and other causes? These are but samples of questions which are pressing but to which no satisfactory answer now appears available.

Forest investigations in the Northeast should not, in my judgment, be limited in scope to those activities which are handled directly by the Forest Service. The control of insects and diseases is inseparable from satisfactory forest management, and investigations in these fields are as necessary as in silviculture or fire protection. I hope that representatives of the Bureau of Entomology and of the Bureau of Plant Industry may be permanently stationed in the region, and that whether their headquarters are at the experiment station or not they may work in close cooperation with it. The working out of the necessary arrangements between the bureaus involved to make such cooperation effective should not be difficult. Certainly investigations in forest entomology and forest pathology are of prime importance, and must be conducted in conjunction with investigations in the field of forest management if the results secured are to be applicable in practice under field conditions.

I should like to add just a word as to personnel. It is essential that forest research in general be conducted by thoroughly trained and capable men. This is particularly true in the Northeast. More investigative work has probably been done here than in any other part of the country. More interest has been taken in the practice of forestry, and the immediate adoption of improved methods in many cases awaits only the accurate information necessary to make them possible. There are more foresters in the Northeast than in any area of similar size elsewhere in the country, and these include men of wide experience and independent judgment. The work of the forest experiment station will be followed with the closest attention both by these foresters and by many timberland owners. For these reasons it is essential that the director of the station be a man of high caliber with recognized standing in the profession and with investigative ability supplemented by a personality that will enable him to inspire confidence and to exercise real leadership in a field where leadership will often be difficult. The selection of correspondingly capable assistants is second in importance only to that of the director himself. The Northeastern forest experiment station has perhaps better opportunities, if properly conducted, to demonstrate the value of forest research than any other in the country.

Certainly there is no region in which an experiment station is more needed. The forests of the Northeast are its most valuable natural resource. Their perpetuation through improved methods of forest management is essential for the continued industrial, agricultural, and recreational development of the region. Authoritative information as to the best methods of forest management is, in spite of the work already done, in most cases not available. The forests of the region are to a large extent still in such a condition that the immediate adoption of improved methods would prevent the devastation that has already occurred in other forest regions, such as Pennsylvania and the Lake States. The permanent character of the ownership of the forests and their proximity to good markets favor the introduction of improved methods as soon as these are definitely known. Local sentiment is strong for the establishment of an experiment station, the findings of which will be followed with the keenest interest and applied as rapidly as possible.

There is a real and urgent need for the immediate establishment of a forest experiment station which will take the leadership not only in the actual conduct of investigations but in coordinating and stimulating the conduct of forest research by other agencies. Its opportunities are limited only by the funds at its disposal and by the character of its personnel.

MANAGEMENT OF PRIVATELY OWNED TIMBERLANDS IN MAINE

By Geo. T. Carlisle, Jr.

During the past two or three years we have heard considerable discussion regarding Government control of privately owned timberlands. A blanket charge of mismanagement seems to be taken for granted and the character of a private owner of timberlands is painted pretty black.

Being engaged with other foresters in the State of Maine in the management of timberland and thinking conditions were at least reasonable, I have been somewhat surprised that our State was not excluded when some of these charges were made. It seems that we have a peculiar situation down there, for the owners and foresters are for the most part on friendly terms and in one or two cases I know of foresters who have become timberland owners.

Our private owners are somewhat conservative but most people who foot the bills are—I have had the opportunity to talk with some of these foresters—owners and got the impression that they too were developing that characteristic.

The bulk of our timberland in Maine is held by pulp or other manufacturing companies and by individuals and estates. The former have many millions of dollars invested in permanent mills and improvements, while the latter are much interested in the future value of their property as they expect to hold it as an investment. The manufacturing companies who own land have, without exception I think, foresters connected with their woods departments and some of them have several. The individuals and the estates also have their foresters. If the situation is so particularly bad in the State it would seem to me that these foresters should at least bear some of the criticism. It might be well to consider for a few moments if the forester is having any influence on timber management in the State.

As you may know, a large part of our timberland is cut under a very extensive system of so-called permits, which are really licenses to cut and carry away standing timber. The timberland owner other than the companies do no operating, this branch of the work being left to operators holding the permit. These permits in the past have contained

few conditions as regards the care of the forest, the operator went on a township and cut what and where he pleased, but from time to time various conditions have been imposed until at the present time the following clause is printed in many of the blank forms:

"The operation contemplated under this permit so far as it effects forestry methods for the preservation of the timber is to be conducted under the direction of a forester appointed and paid by said grantors, but who while engaged in the work, shall be boarded by said grantee. All differences of opinion as to mode of operating which may arise between grantors and grantee are to be adjusted by the forester, whose decision shall be binding and conclusive upon the parties to this permit."

It may be true that it is fine type and some of the operators can't read but it gives us something to read to him in case of necessity. It will be seen from this that the forester has at least got his name in print.

There is the question of detailed maps, estimates, and reports which, I think you will all agree, is the basis of all our management work. I know that there is great interest shown in this line. The most of the companies have these reports in detail and the remainder is being added to rapidly. They consist for the most part of quarter-mile cruise lines and sample plots every five chains, giving all details of topography and a report on condition of the timber and how and when it should be cut. There is, of course, some latitude here but I think the bulk of the work is done along these lines. In many cases these plots are permanently marked on the ground so they could be identified at any time. The timber is tallied by diameter classes and the tally sheets filed away for any future reference.

For many years the diameter limit has been in force in cutting the timber and has received criticism, some of it justified, but I believe over large areas in the northern part of the State it has worked as well as any method that could be devised. The fact that a very much increased price can be obtained for the lands so cut is evidence. I have in mind one tract of 10,000 acres purchased in 1870 for some 54 cents per acre. Since that time it has been held in one family and has always been cut to a fourteen-inch diameter limit. To date it has returned a value of approximately $15 per acre over and above interest and taxes and is one of the most valuable holdings in the family. The chief objection that I find with this method of cutting control is that there may be some danger of loss by blowdown and also that it does not take in the

suppressed trees which oftentimes may be defective. In most cases at the present time we are using a combination, clean cut where there is danger of loss from blowdown, or a large percentage of defective trees of the smaller diameters, and using the diameter limit on such areas where there is protection and a healthy growth.

When economically possible selection of species is used. On one particular area of 30,000 acres we are working this to good advantage. It consisted of practically a hundred-year-old burn that had come up to white birch, poplar, and mixed softwood—largely pine. Our plan here is to remove the poplar and birch several years in advance of the softwood. This system has been in force some ten years and results are very gratifying. As added fire protection we have left seed trees. These trees by the way went us one better and immediately began raising young pine without waiting for the fire. They show up so well that I have had to stop and explain to the owners of the tract why I am not leaving them on certain other tracts that they owned. In all cases where economically possible we are working off our hardwood, such as poplar, birch, maple, etc., which is overmature.

Some of the companies at the present time maintain their own nurseries and have ambitious planting programs for certain types of land. The State nursery at the University of Maine does not begin to take care of the orders received. I do not believe, however, that in our ordinary spruce lands the private owner can afford to spend much money for this work as in most locations the young growth comes in naturally if protected.

This, of course, will lead us to the question of protection from fire. The private owner pays a tax to the State for this purpose and good work is being done. There is, of course, room for much improvement and I think much will be accomplished in the near future. The private owner in addition to the tax is purchasing gasoline pumps to be stored at advantageous points and in extremely dry times are placing extra patrols.

Formerly little attention was paid to waste in operations either in stumps or tops or the question of scattered timber. As the economic conditions changed and uses could be had for this waste as in the nature of pulpwood a system of inspection was adopted and at the present time it has become necessary for the sawmills to find use for the low grades of wood in order to compete with the pulpmills for favor with the

owner. About a week ago I visited a mill where they were building a box and tub factory in connection with the sawmill in order to use logs not fit for dimension stock.

The owner is at present getting much cooperation from the operator. This is due I think to education and public propaganda. As an example: On one area we were notified that cutting had started; we had no forester available for a week or two to mark the seed trees. However, the woods foreman took it upon himself and did a good job.

In the above brief remarks I have no intention of claiming that the management of our private lands in Maine is perfect. I simply desire to bring to your attention the fact that our conditions are such that the greater percentage of the private owners are interested in the future value of their property. There is little trouble in obtaining consent to try different policies if it can be shown that they are reasonable and that the expense incurred would be justified by the results.

I believe that the forester is having influence and that progress is being made, also that this progress is well founded. It is not a rich man's hobby, to be discarded at any time, but rather the convincing of the ordinary business man that such methods pay. This is proved by the type of men who employ foresters. Personally I believe that when planting, slash disposal or similar practices become economically sound for our State they will be adopted by our private owners of timberland without the necessity of Government control.

SUSTAINED YIELD IN CERTAIN FOREST LOCALITIES IN MASSACHUSETTS [1]

By H. O. Cook

Chief Forester, Massachusetts Department of Conservation

Most of us will agree, I think, that each great forest region on this continent, its development and utilization, will go through four stages, approximately, as follows:

First, the pioneering stage where timber is cut largely for local and nearby use and where the amount used is scarcely equal to the annual increment. Some of the more remote portions of Pacific Coast forests and Alaska are yet in this stage.

Second, the great development stage wherein the lumber industry grows to large proportions and wood-using industries spring up as a companion of the lumber industry. During this stage, forest products are produced away above the demands of local markets and the surplus is exported to other sections of the United States or to foreign parts. The Northeastern forest region was some 70 to 80 years in passing through this stage, but the Lake States accomplished it in half that time and the Southern States promise to do nearly as well. Of course, at this stage, the cut is greatly in excess of growth, so that you eventually come to the third stage where the facilities for manufacturing or utilizing lumber are in excess of the supply and you are forced to move your lumber manufacturing industry to new fields of virgin timber while the less portable wood-using industries are obliged to import their supplies from sources far away.

The fourth stage comes when the lumbering and wood-using industries have adjusted their demands and output to the native capacity of the tributary forest land. The lumbering industry in a second growth forest region is more or less automatically forced to adjust itself to the forest producing capacity of the region for the sawmills can manifestly only use the mature or nearly mature timber, so that in a second growth forest region, the lumber industry is bound to be very nearly on a sustained yield basis. The wood-using industries, however,

[1] Delivered before the annual meeting of the Society at Boston, December 29, 1922.

on account of their ability to import supplies from a distance are likely to remain overdeveloped for a considerable period of time, and I know of no large region where it can be said that both the production of lumber and its consumption by wood-using industries has been adjusted to the natural forest output of the region.

Invariably, you will find the region in one of three first mentioned stages of development. There are, however, in Massachusetts, two restricted localities where we have wood-using industries using white pine, that obtain their supplies from the forest region around them, have been doing it for fifty years or more and from the knowledge that we can get through forest surveys bid fair to keep running at their present capacity for fifty years to come.

The first of these two localities is that part of Massachusetts included in Plymouth County and the industry is the manufacture of wooden boxes, which is the only wood-using industry in that county outside of building construction. In order to have you understand my exposition that this industry is on a sustained yield basis, it will be necessary for me to give some details covering its methods in Plymouth County, which are unique in a way.

The box industry in this county is divided amoung forty small plants,the largest not using more than 5,000,000 feet of lumber per year and the smallest about 100,000. They produce boxes for two industries indigenous to that region, shoe factories and cranberry growers, and consume in all about 30,000,000 feet of lumber per year. Nearly all these little box shops are of ancient lineage, dating not quite back to the Pilgrim fathers, but they have been in business from 50 to 75 years. Some of the shops look as if they came over with the Mayflower. Their logging methods are the most unique part of their business, for although they purchase stumpage and do their own operating, yet most of their logs come to them by a system of purchase which will buy logs either delivered in the mill yard or yarded out beside a main road, where a motor truck can pick them up. The logs are scaled by the calipers cord rule, and in either case a uniform rate is paid no matter whether the purchase involves one or 100 cords. When logs run very small or have bad defects, the scale is cut. The important result of this system of logging is that the owner of a woodlot is not obliged to cut over more than a small area at one time. He can take out a few mature trees this winter, haul them to the mill, and next year cut a few more.

up there. To some extent these industries buy logs hauled to their yards by local farmers, but the greater part of their supply comes from woodlots on which they own the stumpage or land. The largest corporation owns 20,000 acres of forest land in territory adjacent to Winchendon, and the others have considerable holdings. When these corporations purchase only the stumpage they naturally cut all the available growth and because they can use very small logs the stripping is bound to be very complete. When, however, they own land and timber both, their methods of cutting are much more conservative.

Although the average cut-over area in this section is somewhat larger than that in Plymouth County, yet such is the natural pine producing capacity of the soil that white pine reproduction is everywhere abundant and this has been supplemented by artificial planting, so that there are now more than 3,000 acres of privately owned plantation in northern Worcester.

In determining whether these industries are on a sustained yield basis, however, we are met with some complications. In the first place, the country tributary to Winchendon contains three or four towns in New Hampshire as well as four in Massachusetts and I have no forest data regarding these towns. In the second place the wood-using industries of Winchendon have no monopoly of this district as a source of supply and it is freely tapped by lumbermen who send their product to other wood-using centers in Worcester County.

Our forest data show, however, that there are 18,000 acres of pine type in the four Massachusetts towns, 6,000 of which has a merchantable growth and which will cut 120 million feet of lumber. Assuming that the four towns in New Hampshire will produce as much, and this is at least a reasonable assumption, we have not less than 200 million feet or a 25-years' supply of timber for the Winchendon industries already on hand within 12 miles of their factories. Following this, there are 14,000 acres of submerchantable growth which will be ready for market in 10 years, and 30,000 acres of young pine forest from 5 to 30 years of age on hand in the same district. It would seem as though these industries were assured of a continuous supply of pine logs. As I have said before, however, outside industries invade this same field, but the Winchendon people can still allow them to take one-half the yield and still run their own plants at present capacity. In order to assure themselves of a continuous supply of timber the

Winchendon industries should aim to own a central one-half of the 56,000 acres of pine bearing land. As a matter of fact this has already been accomplished, for one concern owns 20,000 acres in this district and another 5,000 acres, so that I feel certain that if these industries are not unduly enlarged they can be carried on continuously. This is a region in which the fire hazard is not large, but with increased protection and some artificial reforestation the area and yield of their pine bearing land can be so increased as to not only permit the continuous operation of the present industries, but to even allow of their expansion or the introduction of new ones. As a matter of fact, a new pail factory is today in process of erection in Winchendon. Can any forest section of the U. S. A. where logging has been going on for more than 200 years show so promising a future?

It is somewhat dangerous to draw broad conclusions from these isolated instances of a balanced production and use of timber resources but they at least indicate that the chance of getting our wood-using industries on a sustained yield basis is more or less founded on the possibility of getting these same industries broken up into small units, taking them out of large industrial centers and setting them down in the forest region close to their supply of raw material and thus make an intimate connection between the production of timber in the forest and its use in the factory.

Undoubtedly, pressure of economic necessity may in time bring this condition about, but in the meantime it will do no harm if the germ of this idea is allowed to get into the circulation of the wood-using industries themselves.

If the farmer owns a 100-acre pine woodlot he can and does manage it as an integral part of his farm and on a sustained yield basis, by cutting the equivalent of two or three acres (50 to 100 cords) per year.

When white pine type on a gravelly soil is cut in small units, the type is maintained for pine reproduction and is sure and abundant. I could convince you of this if I could show you the region, for I believe that there are few sections in the white pine region with more abundant white pine reproduction than in Plymouth County.

A forest survey of Plymouth County shows 300 million feet of lumber on 30,000 acres of pine-bearing land, containing growth of merchantable size, fifty years or more old. I have before mentioned the fact the box factories of this county use about 30 million feet each year, so that there is a 10-years' supply in sight. But there are 30,000 acres of submerchantable pine type 30 to 40 years old, which will be merchantable when the growth at present mature has been cut off and which we may safely assume will produce as much lumber as the present 30,000 acres of merchantable growth. Our forest survey again shows 35,000 acres of pine type under 30 years of age, part of which will be merchantable at the end of 20 years, when we can assume that older classes will be more or less exhausted. You can, therefore understand why I feel certain that this wood-using industry which has been in existence for upwards of 60 years, if carried on at present capacity, is assured of 60 years more of life, and if the present logging methods are maintained its life will be perpetual. The only threat to its continued existence is the growth of population in this section, which will demand more land for residential and manufacturing purposes, and so may restrict the forest land to an area too small to produce the annual crop of 30 million feet.

I have attempted here to demonstrate how, without any conscious effort or planning, a wood-using industry has put itself on a sustained yield basis. It has been done, too, under circumstances which are the reverse of what we have been taught are fundamental for good forest management. Instead of large contiguous holdings owned by a large corporation, we find small corporations owning little forest land, the forest land being in the hands of private owners and their individual holdings are small woodlots. Perhaps some of our so-called fundamental ideas as to what constitutes a basis for continuous forest management needs some overhauling.

In making my estimates of present and future timber resources in Plymouth County, I did not take into consideration timber standing on some 60,000 acres of land classified under the pitch pine type, although these box shops use considerable quantities of pitch pine. Furthermore, under improved fire protection this pitch pine type is slowly but surely changing to a white pine or mixed pine type, so that in 50 years hence the available area of white pine is bound to be greatly increased.

It may appear that in this exposition, I have from the forestry standpoint, put the cart before the horse, because I have described an industry that has cut its pattern according to its cloth, its capacity according to the natural forest production, rather than attempted to build up the forest to meet the demands of the industry. It appears to me, however, that before our wood-using industries in general can be put on a sustained yield basis, they will be obliged to go through some such sort of readjustment. I have no question but what if through State, private, and corporate endeavors, the forests of Plymouth County are made to produce 40 to 50 million feet of pine each year instead of 30 million, that the wood-using industry will expand to meet it. The market is at hand.

WINCHENDON SECTION

The second of the two localities in this State where there is a wood-using industry long established and which gives every indication of a long life in the future is located in Winchendon, in northern Worcester County, on the New Hampshire border. In this town there are three woodenware factories and two toy shops. The oldest of these plants was established in 1840, while the others date back to the early 70's, so that they have had a continuous existence of 50 years or more. These industries use each year about eight million feet of white pine and two million feet of hardwood, the latter being largely used in the toy factories. The pine comes from the country within a 12-mile radius of Winchendon, which includes four towns in Massachusetts—Winchendon, Royalston, Ashburnham, and Templeton—and the towns of Richmond, Rindge, and Ipswich in New Hampshire. The hardwoods, however, are not a local product. The logging methods are not unlike those in Plymouth County already described, that is instead of cutting up the logs in the woods by means of a portable mill, the logs are hauled directly to the factories by motor truck or team and sawed

BRUSH BURNING IN NORTHERN NEW HAMPSHIRE

By W. R. Brown

In cooperation with the United States Forest Service, the Brown Company of Berlin, New Hampshire, conducted an experimental camp for brush burning in northern New Hampshire during the winter logging season of 1921-22. The place for an experiment was selected by employees of the Forest Service from the Maine and New Hampshire lands of the Brown Company, in order to secure what they considered to be average conditions in the New England region. The place chosen was Hell Gate camp on the Dead Diamond River in northern New Hampshire. This camp served the purpose of a general storehouse for the Brown Company, and was surrounded by a considerable number of camps. In the summer it was 43 miles from the railroad, partly over a good State road, and in the winter 25 miles over a snow road, so that men and provisions were obtainable at reasonable figures. The men and horses used in the work were lodged in the Hell Gate camps with a nominal charge for overhead. They were boarded at cost and their labor was charged at the going rate for men and horses for the winter.

The work was laid out to accomplish the following:

Operation I.—To ascertain the extra cost of piling and burning brush in crews operating for long logs over the usual cost where brush piling and burning was not done.

Operation II.—To ascertain the extra cost of piling and burning brush in crews operating for 4-foot pulpwood over the usual cost where brush piling and burning was not done.

The comparison undertaken in *Operations I and II* was conducted in the same approximate area, but each operation was divided into two methods of piling and burning:

Spring Burning, A.—Where the brush was piled in the summer and fall before the snow came and when it was unsafe to burn, and burned either on the first snow in the fall or in the spring, and

Winter Burning, B.—Where the brush was burned as fast as piled in the winter on snow.

The area chosen for *Operation I, A* and *B,* and *II, A,* carried a stand of medium tall, scattering, average topped spruce and fir balsam with

which a considerable amount of hardwood was mixed with an average amount of underbrush. The bottom was rough and broken but reasonably free from windfall.

The area chosen in *Operation II, B,* was divided into two locations, the first location carrying a fair stand of spruce and fir timber equal to the stand in area cut in *Operation I, A* and *B,* the second location carrying a splendid stand of mature old growth spruce and fir, large and heavy topped, which had never been cut into, with little or no hardwoods, little or no underbrush, a fairly smooth bottom and reasonably free from windfal.

Area in *Operation I, A* and *B,* and the first area in *Operation II, B,* were one mile from the camp on the side hill close to a drivable brook. The second area in *Operation II, B,* was situated two miles from the camp on a flat, and a mile from a drivable brook.

The mutual agreement between the Forest Service and the Brown Company specified in advance the wages chargeable for men and horses, the cost of provisions, overhead charges for camp use and depreciation of equipment, that an agent of both was to be in constant attendance on the job, that weekly and monthly reports were to be rendered, that figures obtained were to be kept confidential until agreed upon at the close of the season, and that the result obtained from one year's work was not to be considered determinative for all time.

The operation was commenced October 16, 1921, and finished March 8, 1922. Snow coming early on November 5 interfered with the burning of brush which had already been piled out during dry ground logging, and these piles had to be abandoned to be burned in the spring. Little or no rain fell in the fall or winter to ice the brush piles and interfere with burning. While the early snows were somewhat heavy, later snows were light, and weather logging conditions in general were the most favorable for years.

In Operation I, A and *B, long logs, spring burning, and winter burning,* five crews of five men each were set to cut long logs, each crew consisting of a teamster, a head chopper, second chopper, swamper and sled tender. Alternating each week two of these crews acted as control crews and did the usual straight logging. The other three crews in addition to their straight logging piled their brush in the fall and burned it during the winter. In the fall the swamper and sled tender piled their own brush, but when the snow became about two feet deep a brush burner became necessary and was added to the crew.

The personnel of the crews remained the same as far as possible, subject only to the usual replacement of men leaving. An attempt was made by a capable boss to secure the best talent possible from the many men passing through the Hell Gate storehouse.

In Operation II, B, pulpwood, winter burning, first location, two crews consisting of three men each, a first and second chopper and swamper, were set to cutting and piling four foot pulpwood. They alternated weekly during the season, one crew piling and burning brush and the other acting as control crew without doing so.

In Operation II, B, pulpwood, winter burning, second location, in the old growth, four crews of three men each were set to cutting and piling four foot pulpwood, two burning brush alternately with two not burning brush.

Careful scale and accounts were kept by representatives of the Forest Service and the Brown Company working together, who were in substantial agreement as to amounts and costs. The system of scaling and accounting was that used by the Brown Company in its many operations and covered practically every detail. At the close of the operation in March unburned piles left when the snow fell in the fall were burned in the spring by special crews between April 25 and May 3 without endangering the forest.

In the crews where brush burning was being done, the branches as fast as they were lopped were dragged into piles and burned, fire being carried from one pile to another. It was necessary to start from four to ten fires daily in each crew. The branches burned readily when freshly cut, but if piles were left and became covered with snow, the snow acted as a wet blanket and made a fire extremely difficult to start and maintain. It was found better practice in order to burn piles that had been covered by snow to start a fire and move the branches piece by piece to the new fire, rather than to try to burn them where they lay. It was necessary to haul branches lopped from long logs farther in distance than where lopped from trees felled to be cut into four foot pulpwood, because the boles of the trees from which long logs were being made had to be felled alongside and lengthwise of a drag road, while trees destined for pulpwood could be felled in any direction and the resulting brush was more readily gotten together. Piles burned holes in the ground of an average diameter of 10 feet, but the ratio of the sum of these areas to the whole area of the forest was of little moment. No attempt was made to burn blow-down or natural forest

litter, of which there was a considerable amount on the ground, or such hardwood trees as were felled in the making of roads. The men were somewhat bothered from the sparks igniting their clothes and a few left on account of the expense of keeping in clothes. No trouble was experienced from men loafing in front of the fire and no burning accidents were experienced.

The final figures as agreed upon for this test showed a total average expense from all operations on all areas of $1.05 per cord for brush burning over the usual logging costs. This was divided among the various experiments as follows:

The average extra cost for *Operation I—Long logs–Spring burning* for burning brush piled in the fall and burned in the spring, was $1.82 per cord, or an addition of about 20 per cent to the cost of cutting and hauling, but $1 of this amount was due to the necessity of spring burning. As a practical matter brush piling called for an addition of one extra man in each crew for the purpose, as it took all the time of one man to collect and pile the brush for two choppers, a swamper and sled tender, these men favoring the brush burner as much as possible.

When as in *Operation I, B—Long logs–Winter burning* the piling and burning was all done in the winter months, this extra cost was reduced to $1.01 per cord or an addition of 16 per cent to straight logging. While costs for cutting were larger than in *Operation I, A,* the costs for hauling were less, and this job escaped the extra cost of spring burning.

In *Operation II, A—Pulpwood Spring burning,* so little 4-foot pulpwood was cut in the fall—an amount of only 55 cords in all—and the brush piled for burning in the spring, that it was considered not enough to make a comparison and the figures are not given. Also an attempted burn in the fall, the brush from 64 cords of long logs in *Operation I, A—Long logs,* proved to be so expensive and unsatisfactory that the cost was not used in arriving at the figures above.

In *Operation II, B—Pulpwood–Winter burning,* there was a difference of 52 cents per cord in the cost between a crew cutting and piling 4-foot pulpwood that burned brush and one that did not, or an addition of 8 per cent to the cost of cutting and piling.

Many interesting lessons were learned from this experiment which have a bearing on the desirability of the introduction of this kind of

work in northern New Hampshire. It is probable that there will be less cost per cord in brush burning while cutting 4-foot pulpwood during the winter months than when cutting long logs, from the following: That the men are close to their work, that the bole of the tree is run farther into the top, that less right-of-way for roads has to be made, and that the tops have to be dragged a less distance. The cost of brush burning will remain reasonably steady during the year, being a trifle higher in the early months and reduced a little as the year progresses, provided deep snow is not encountered, due to the experience of the men and the stimulus given them by the management. The cost of brush burning in the heavy growth will be somewhat less than in the light growth, and the difference between burning and not burning in the heavy growth will be less than in the light growth. It would seem to the writer, however, that the outstanding lesson learned was the greatly increased difficulties and costs of spring burning over winter burning and the dangers attendant thereon. More and more the long log cut is being displaced by a straight 4-foot pulpwood cut. Much of this wood is peeled in the early summer before being cut up and much of the pulpwood timber is scattering and must be picked up in the fall on bare ground before the arrival of deep snow. Since, therefore, the greatest proportion of 4-foot pulpwood is cut in New England during the summer and fall, during the season when it is unsafe to burn brush, this brush must be piled and left for burning later. In only two seasons of the year can this be safely done. The first is late in the fall when heavy rains have set in or on the first fall of snow. The second, a short interval in the early spring. As the snow comes quickly in New England, the interval afforded for this work in the fall might be less than one week and in an average year at best would afford only two or three weeks for work. During this short period if large operations had been made over a whole State in the summer and fall (Maine and New Hampshire, for instance, would probably cut better than two million cords of 4-foot pulpwood before snow came), it can easily be seen that a great army of men would be required to cover all the brush burning, a practical impossibility to secure on account of distance, distribution, and uncertainty. This condition would exist in the spring in a more acute degree, the time of burning being even shorter, and the moisture hanging in and around the piles longer than in the open. In the spring after the men have left the woods for good (summer logging not starting until much later), it would be a costly

matter to bring them back and run camps solely for this purpose for such a short time for such a large number of men. Again, burning brush in the fall and spring, to say nothing of the occasional pulpwood pile that experience has shown is destroyed by some careless burner, would necessarily have to be left to the judgment of the logger, as conditions and seasonal changes vary in different localities. It is impractical to supervise such work by any possible fire warden system over an immense area, and a tremendous fire risk would be existent if the burning was left to the general judgment. It also must be borne in mind that New England conditions as to brush burning parallel but slightly Western, Southern, or European conditions in the matter of soil, seasons, forest floor, stand per acre, species, climatic change, rainfall and many other variants, and little comparison can be had. While it is true that burning clears the immediate vicinity of fallen trees of brush and slash, there still remains a larger area adjacent about and around, between roads, in areas where from the scarcity of trees or other reasons no cutting is done, along the banks of brooks, in old roads and landings, and in a thousand places which still remain covered with a considerable amount of forest litter, blow-down, bushes, leaves, dry grass, bare sticks, and other inflammable matter which it would be an impossible task to rid the forest of, and this is at all times equally ignitable by lightning, careless campers, and the usual fire risks. Such litter is constantly accumulating, especially from wind-throw, following thinnings, from bug work, rot, etc., and the areas it covers in toto would not be cut over by operators in many years. If brush burning in New England was made compulsory for every operation, the fire risk of the State would be little helped for generations. In other words, the burning of brush in operations alone is not at all a complete riddance of inflammable material existing in the woods and only in small restricted area offers a partial solution of the fire risk. It is also well known that once a fire is well started in dry weather and high winds it will run in the crowns of trees alone.

For the reasons stated above, therefore, it is the writer's opinion that the advantages gained for New England in fire protection by spring or fall brush burning would not be at all commensurate with the attendant cost and danger to the State.

While it is understood that results obtained above were for a single year and carried on by inexperienced labor, which necessarily would be subject to some improvement were tests continued, it is the writer's

opinion that experienced labor and technic could not greatly reduce the costs, as the nature of brush burning is neither intricate or difficult of comprehension.

If there is something like 600,000 cords of wood cut yearly in a small State like New Hampshire and some millions in New England as a whole, the addition of anything like $1 a cord yearly to the cost of operating this amount, or from $600,000 to some millions of dollars annually, for the sake of fire protection, when the last 10 years' average annual fire loss in the State of New Hampshire by forest fires is not in excess of $50,000 and proportionately low elsewhere, is a matter that from a financial point would not seem to be sound business for the public. It is the writer's opinion that purely as a fire protective measure, judging from unfavorable climatic conditions, the inadequacy of results obtained and the excessive cost, that the burning of brush in logging operations in New England is not good forestry practice, and that a much smaller tax upon the community spent in fire protection as applied to reduction, report, patrol, accessibility, equipment, and enforcement would yield and is yielding far greater results. From a forestry angle, the burning or leaving of brush and slash offers an interesting field at the present time in New England for further investigation to ascertain what effect it has, if any, on the harboring and spread of devastating beetles; what effect it has if left evenly scattered about in furnishing shade for seedlings and in retaining moisture in the spring; what would be the loss in reproduction if seed cones were all burned up; what is the length of time that seed can remain fertile in the forest floor and germinate and in what kind of forest floor it lives longest; how long lopped limbs take to rot naturally; and some other brush disposal matters about which the writer is uncertain.

A PLEA FOR COMMON SENSE IN CHANGES OF BOTANICAL NOMENCLATURE

By Emanuel Fritz

Is it not time to call a halt on the practice of changing the official botanical or Latin names of trees? The literature bearing on many of our important trees is already so extensive and so widely used that the present botanical names of these trees are thoroughly established. Yet we find the Forest Service preparing to adopt new official names for certain well-known trees in a proposed check list which is to supersede the list published as Bulletin 17 of the old Division of Forestry in 1898. These changes are not necessary, are without sensible foundation and, if adopted, will cause endless confusion and undoubtedly also many costly mistakes in the business transactions of nurserymen, foresters, and lumbermen. Some of the earlier literature is somewhat confusing to the present-day student because names were used that are now obsolete. But in the last score of years there has been, happily, a marked uniformity in nomenclature used by writers on forestry and allied subjects, except perhaps on the part of a few botanists. What good can come of another change? Is it not bad enough to have a babel of common names without further muddling the botanical names? Is it not very improper for one branch of the Forest Service to encourage lumbermen to adopt a simplification of the common names of trees and lumber, and for another branch to upset present botanical names of trees where there is now no confusion?

Botanists have a law by which they are supposed to be guided in adopting botanical names. This law states that the first name ever applied to a tree is its correct name. In other words, the name given a species by the first botanist to describe it, and to file a specimen in some herbarium, is the name that should be official for the species. This is certainly a good law, but let us see what a blind adherence to it will cause. With so many species to describe when the science of botany was young and after the binomial scheme of nomenclature was adopted it was inevitable that two or more botanists, working independently and entirely ignorant of each other's work, should describe the same species and give it different names. The first of these may have published his description in an obscure publication while the latter's

description may have received more prominence and naturally was the one to become known and established. This latter name may be used thirty, fifty years or more, when out of a clear sky comes the discovery of a botanist, rummaging among the dusty specimens in a foreign herbarium, that the name we have been using so long is not the original or "correct" name. He therefore rules that we will have to cast it overboard and take up the rediscovered original name. This is what has happened with our old friend red oak. We have been calling it Quercus rubra so long that we have come to look upon that as the only name. But now we are told Q. borealis antedates this name and should take the place of Q. rubra. To make matters worse, it was discovered that Linneaus, the originator of the binomial system and the first man to name many species, applied the name Q. rubra to what we now call Q. digitata, our Spanish oak, and we must now forget the name Q. digitata and call this oak Q. rubra. What confusion this will cause! Is the botanist's priority law so inexorable that exceptions are not permissible? Would it not have been simpler and much more sensible for the discoverer to have made a note on the old herbarium specimen of Spanish oak to the effect that its botanical name is now generally Q. digitata? The botanical and dendrological world would be a happier one if he had gone so far as to have destroyed the specimen of Linneaus. This, by the way, is the third change in this tree, many botanists having until a few years ago called it Q. falcata.

Here are a few more cases:

Jack pine from P. divaricata to P. banksiana.

Tamarack from L. americana to L. laricina.

Red spruce from P. rubens to P. rubra.

White spruce from P. canadensis to P. glauca.

Southern red cedar from J. barbadensis to J. lucayana.

California tan bark from Q. densiflora to Lithocarpus densiflora.

Red oak from Q. rubra to Q. borealis.

Spanish oak from Q. digitata to Q. rubra, and the common name is to become southern red oak.

Post oak from Q. minor to Q. stellata.

Chestnut oak from Q. prinus to Q. montana.

Basket oak from Q. michauxii to Q. prinus.

Basswood from T. americana to T. glabra.

Some of the names proposed are of course already known to many of us and were indeed in some use in the past, but in the last two decades our literature has greatly expanded and there is a much more general use even among laymen of present names than ever before. For this reason, if for no other, any change at this time is ill advised.

Botanists are an individualistic class. They have their own ways of doing things and no layman is supposed to know much about botany. Yet we find among botanists a great division of opinion and they do not adhere uniformly to their own law, so much so, in fact, that the law is really no law. Witness the case of our hickories. One botanist insists on Hicoria for the generic name, another Carya. Which is right? What is to be gained by changing back and forth with every change in the backing of the authority? What difference does it make if it is Carya or Hicoria as long as we all use the same name? One botanist insists on calling our bigtree, S. gigantea, another insists on S. washingtoniana although no one else ever calls it that. Botanists of England call the same tree S. wellingtonia. It does not seem fair that a single man, because he is honored as a leading dendrologist, has a right to take advantage of his position and arbitrarily insist on the rest of the world changing nomenclature to conform to his ideas. Sargent has recently published a new edition of his manual. In it we find the most radical of changes from his older edition. If in ten years he should publish another edition would we have inflicted on us still further changes? He has no more right to upset established botanical nomenclature than he has of taking the characters which you and I use to indicate degrees and minutes and use them, as he does in his manual, for feet and inches. Sargent's old manual was looked upon as an authority and no doubt many botanists will look upon the new manual as their "bible." But those of us who will have greatest need for tree names in a business and professional way should not change with temperamental botanists and should insist that in the new Forest Service check list, which will be the forester's and lumberman's "bible" and will bear the Government's official stamp, the radical changes proposed be omitted and that the present accepted nomenclature be retained and be published far and wide.

In connection with Mr. Fritz' article, the following resolution will be of interest:

RESOLUTION

Concerning changes in botanical nomenclature as contemplated by the United States Forest Service. Adopted by the California Section of the Society of American Foresters, December 15, 1922.

Whereas, It has come to the notice of the California Section of the Society of American Foresters that the U. S. Forest Service is contemplating publication of a new check list of the trees of the United States, and

Whereas, It is proposed to make in this new check list many radical changes in botanical nomenclature which appear to be needless and without sensible foundation; therefore be it

Resolved, That the California Section of the Society of American Foresters believes such changes as productive of harmful confusion and is therefore opposed to them, or any changes whatever in nomenclature for which there is no real need or where there is now no confusion; and be it further

Resolved, That proposed changes in botanical nomenclature be submitted for consideration to a larger committee of representative American botanists than has considered this matter in the past; and be it further

Resolved, That copies of this resolution be sent to the Forester, U. S. Forest Service; the President of the Society of American Foresters; the managing editor of the JOURNAL OF FORESTRY, R. Zon; and the chairmen of the Sections of the Society of American Foresters.

ONE STEP TOWARD GETTING FORESTRY ACROSS TO THE MINOR EXECUTIVES

By Edward Richards

With the rapid advance in the practice of forestry, especially in New England and the East, the fact has become evident that if the foresters now in charge of the woodlands are going to have their orders properly carried out by the woods force, it will be necessary for them to definitely begin training their woodsmen along the lines of careful forest practice. Of course this will be automatically accomplished, without direct and conscious effort on the part of foresters as an organized group, by the mere educational value of putting into practice what is outlined by the technical heads of the forests. Still the question arises—Cannot this work be done more rapidly and better if the foresters as a body consciously undertake it? With this in mind, I would like to offer the following suggestion to the Society as a whole with the purpose of promoting discussion and leading ultimately to some definite action.

Let each of the Sections of the Society undertake the formation of a woodman's division of their Section. The membership of this division shall be elected from among the woods workers, walking bosses, portable sawmill men, fire wardens, rangers, nursery men, etc., in the employ or under the direction of foresters in the Section. These practical woodsmen are to be elected by each Section as associate members of that Section without a vote. (They are not to be elected associate members of the Society at large.) At the various meetings of the Sections, efforts should be made to have these associate Section members attend the meetings and take part, one or two special problems in which they will be especially interested forming part of the program. As time goes on and the various Sections build up such woodmen's divisions, finally several Sections of the Society could arrange for special meetings of their woodsmen's divisions. It might even be worth while to look forward to a national congress of such woodsmen's divisions in which the best practical methods of carrying out the technical directions of the scientific men could be discussed by the practical men. In this way, the technical foresters of the country will make a beginning of consciously

educating their subordinates along the lines best suited to the proper handling of our woodlands.

Some arguments favoring the above plan are as follows:

(1) The foresters assume a definite program of educating minor executives.

(2) Such a move will definitely increase the personnel of those consciously affiliating themselves with the forestry movement.

(3) It will increase the circulation of the JOURNAL OF FORESTRY. Without serious difficulty, a woodsman's division might be introduced into the JOURNAL for the special benefit of these associate sectional members.

(4) The presence of these practical men will greatly assist the technical foresters in their discussions of their various problems, by the introduction of the practical viewpoint of the man who does the woods work. This will be especially true in the field meetings.

(5) It will increase the solidarity of the woodsmen themselves in their efforts toward putting into practice forestry methods. This will be because at such meetings they will find others of their own type facing similar problems and making similar efforts to put the dictates of forestry into practice in the woods.

(6) It will tend to increase the democratic control of our woodlands and tend to break down the accusation that foresters belong to an exclusive highbrow organization where the practical woodsman is unwelcome.

(7) It will build up the fundamental foundation upon which the practical accomplishment of forestry must rest, that is, the force of men who are sympathetic with the ideals of first-class forest practice, and who are the very ones who will be doing the work in the woods.

This idea came to me in the nature of a vision of the needs of forestry in the not far distant future. In speaking of it before the Boston meeting of the Society, I was agreeably surprised to find that the need had already been realized and some attempt made to solve it by some members of the New England Section. This article, however, is for the purpose of calling the attention of the Society at large to the problems and promoting discussion of it.

REVIEWS

Guide Pratique de Sylviculture. F. Fankhauser. Translated by Petitmermet, 3rd Ed., 1921. Payot et cie, Genève.

We are indebted to M. Petitmermet, an inspector in the Federal Swiss Forest Service, for a translation of the last edition of Dr. Fankhauser's Practical Guide to Silviculture.

Since the first edition of this classic in 1866, there have been previously five German and two French editions, the last French edition appearing in 1887, and the third edition dated Berne, September, 1920, but published in 1921, has been enlarged and brought up-to-date.

It is much more than a mere introduction to forestry and contains so much sound fundamental data that it might even be worth publishing in English as a popular text book, provided the data on American species could be substituted for pages 42-110, which deal entirely with European hard and softwoods.

The book as it stands is divided into introduction, environment (including climate, soil and situation), forest botany, silviculture, logging, protection of forests, surveying, and forest improvements. The data on forest botany, logging and surveying are of less interest to the American forester; while the material on forest improvements applies to the Alps, it is of interest to the teaching profession to be able to refer in condensed form to the methods used in stopping and controlling torrents and avalanches. The sections of particular interest to American foresters are importance and utility of forests under "Introduction" and the discussion of artificial and natural reforestation under "Sylviculture."

One of the needs of the profession in the United States is a sounder and clearer knowledge of a few fundamental facts in silviculture which are generally accepted as gospel truths by European foresters. Too frequently American foresters are groping for information in regard to problems which have already been satisfactorily solved in Europe.

T. S. W., Jr.

The Valuation of American Timberlands. By Karl W. Woodward, Professor of Forestry, New Hampshire State College, pp. vii + 246, figs. 14. John Wiley and Sons, New York, 1921.

To quote the preface, "This book is intended to supply certain information needed by the investor, timber cruiser, and student of for-

estry. It aims to give for the continental United States and its outlying territories the principal facts regarding the timber resources. This work tries to give those basic facts upon which a superstructure of detailed knowledge concerning a particular tract may safely be erected. For the student of forestry . . . an attempt is here made to evaluate American forest conditions and compare the forest types with each other."

The first two-thirds of the book are taken up with general descriptions of the seventeen "types" of forest in the United States and those of Alaska, Porto Rico, and the Philippines. Here are presented in a concise style the general situation for each type, including such points as distribution, character of the stand, rates of growth, factors influencing costs of estimating, logging and milling methods and costs, lumber prices, stumpage and land values, and factors affecting the validity of titles. These chapters give a fairly clear bird's-eye view of the general forest conditions over the country, and as a background for more detailed study of local conditions are well worth while.

In matters of detail, however, there are many inaccuracies which should not be overlooked. Some of these are typographical errors, while others, such as various discrepancies between the text and accompanying tables or curves, or between different tables, may be due to inadequate editorial review. Others are plain mis-statements. For instance, the statement that in the western yellow pine type the "topography is not rough, the stands are of a uniform density and size" will come as somewhat of a surprise to one who has cruised this type in central Idaho, while one familiar with southern Wyoming, central Idaho, and eastern Oregon may be surprised to learn that in the lodgepole pine type the topography "is generally steep and rough," or that the species "has few enemies" as compared with others in the region. Nor will anyone who has seen the high plateaus of central and southern Utah agree that the Engelmann spruce type is "confined to the higher peaks so that the topography is rough and steep and the soil shallow," or that "at least eight months of the year have average temperatures below freezing."

The geographical distribution of the eastern white pine, western yellow pine, and lodgepole pine types are inaccurately given, while the discussion of the southern hardwood type applies only to the hardwoods of the southern Appalachians, entirely ignoring the sprout hardwoods of the northeastern States and the central woodlot forests be-

tween the Appalachians and the Great Plains, although Woodward includes both of these regions in the southern hardwood type. One of the most important sub-types of the southern bottomlands—the oak-hickory combination—is omitted from the list on page 63. The statement about Lawson cypress on page 133 does not seem to fit in very well with the fact that it is one of the most satisfactory woods for airplane construction, and that considerable quantities have been exported to Japan.

It is difficult to understand the reasons for some of the discrepancies in the figures given for costs of exploitation in different types. For instance, why should it cost $4 to mill a thousand feet of Douglas fir, using 4 man-hours, but only $3 to $3.50 for redwood, requiring 7 man-hours? Milling northern hardwoods requires 10 man-hours and costs $4, while for southern hardwoods only 6 hours are required but the cost is more than $7. It costs $9.50 to manufacture and market oak lumber in the northeast (p. 45), but at least $19 to manufacture southern hardwoods (p. 78), although only $2 of the difference is due to the greater cost of hauling the logs to the mill. It is also hard to understand why getting out poles and piling should cost $40 per M board feet in Idaho, while lumber can be manufactured in the same region for $14 (pp. 108-109).

Although more than one-fourth of the book is devoted to chapters on timber valuation and land valuation, with considerable detail regarding lumber prices, logging costs, grades of lumber, and other factors, no clear idea is given as to how to appraise the values of either timber or land after the cruise is made. It is merely stated that "stumpage prices should equal the difference between the average sale value of the various grades obtainable from a stand of timber and the sum of all the costs of logging, manufacture, and transportation, including a fair profit." The data on the various factors of costs and values given in these two chapters are exceedingly generalized, and in some cases open to question. It is hard to believe, for instance, that the gross value for the product of an acre of mature timber, even when expressed in terms of the Boston market, disregarding transportation costs, can be $1,800 for Alaskan hemlock and spruce, and only $800 for second-growth white pine, or that it can be $600 for lodgepole pine and only $315 for western yellow pine and sugar pine. Likewise, it may be news to some to learn that in the western white (silver) pine, southern pine, western yellow pine and Lake States white pine types, among others, the general

method of transporting logs from the stump to the mill is skidding and hauling by animals, and that the western yellow pine type is in such small bodies that it is better adapted to exploitation by small portable mills than by large mills. Such stumpage values as $5 per M for black walnut, $3.18 for white oak, $1.58 for cypress, and $1.12 for shortleaf pine may, as the author suggests, have a certain historical interest, but they certainly are of little use in judging of present values.

Professor Woodward must have been in a specially pessimistic mood when he wrote the sections dealing with the costs of growing timber, or else he was under the spell of some of the ravings of certain well-known "economists" of the lumber industry, who can make figures prove almost anything except the possibility of growing trees. There can certainly be little comfort for those who expect to use lumber forty or fifty years hence, when they see that to grow high-grade saw-timber will require at least 150 years, that this will cost $4,450 per acre, and that "the cost of growing it will soon determine throughout the world the value of the standing timber!" If conditions are really as bad as this, we may confidently look forward to a time, and that within a century, when the United States will be as bare of timber as is the worst devastated region in China, and when clear lumber will be seen only in museums.

But the picture is not really anywhere near as bad as it is painted. In the first place, the rates of growth given for the different species are in a great many cases ridiculously low. To say that western yellow pine in Oregon will reach a diameter of only 13 inches in 100 years, that Engelmann spruce will reach only 6 inches and lodgepole pine 9 inches in the same period, or that sugar pine will average only 5 inches and eastern white pine less than 11 inches in 50 years, gives an entirely erroneous impression of the possibilities of growing timber under management in these types. Apparently these figures must represent averages of all the trees in a stand, rather than of the main-stand trees only. In the second place, the average value of land used for growing timber has never been as high as ten dollars an acre, nor is it likely to be until timber-growing becomes so profitable that our millions of acres of idle forest land are all covered with growing trees. Even five dollars would be an exceedingly liberal estimate. Furthermore, when it is considered that the great bulk of our future crops of timber will be regenerated naturally, it is difficult to justify an average cost of regeneration as high as ten dollars, while an allowance of one dollar per acre per annum for cost of protection and administration

means a degree of intensity of management which is not likely to become general in this country for generations.

The camel's back is finally broken, however, by the use of the old bogey Compound Interest, accumulating for periods of from 50 to 150 years. Strangely enough, Woodward cites an office building as a form of investment comparable to forestry, but ignores the fact that the investor in an office building charges his interest off annually. It is interesting to consider the wonderful possibilities in compound interest. One dollar invested at even the low rate of 3 per cent, in a thousand years would amount to approximately seven trillions of dollars ($7,000,000,000,000)—several times the total sum of the wealth of the entire world. What would it cost to grow another crop of giant Sequoias? Small wonder, then that he concludes that it will not pay to grow saw-timber in the Appalachian coves, the southern pine, the sugar pine, and other types yielding less than 1,000 board feet per acre per annum; yet, if that is true, why should he join the ranks of the "residualists" who insist that "it is fundamental that forests should be restricted to the low-priced, stony, rough lands unfit for tillage," or in other words, lands that cannot be used for anything else. It is not done anywhere else in the world.

In conclusion, one point must be borne in mind, and that is, that if we do not want to become wound up in the coils of compound interest, we must begin to grow timber while we still have some left to start with. The man who buys a growing forest while stumpage is fairly cheap, and uses it to produce continuous timber crops from the very beginning, is going to have an enormous advantage over one who waits until stumpage is high. Moreover, as Woodward so aptly illustrates with a comparison of stumpage values of mahogany and second-growth white pine, stumpage prices depend, broadly speaking, on distances between the timber and the consuming market, regardless of the intrinsic value of the product. This is extremely significant from the standpoint of growing timber locally in consuming regions of the East.

W. N. S.

Timber. By Harold Titus. Small, Maynard & Co., Boston. $1.75.

This novel by the author of "Bruce of the Circle A," should be read by every student of lumbering and forestry and especially by every citizen of a timbered State who is interested in the future welfare of

his Commonwealth. It is a story of the Michigan pine forests; of their great extent and the tremendous wealth they yielded; of their gradual depletion; of the decadence of what were once thriving towns; of the vast man-made "economic deserts;" of the heartless exploitation of gullible settlers by knavish cut-over land real estate brokers.

Luke Taylor has made millions in timber; his son John has never done a stroke of work until driven to it by a girl. Helen Foraker is the daughter of a lumberman who also became wealthy but who had a vision of our future needs for lumber. Feeling a sense of responsibility to the public he begins to reforest his cut-over lands but dies early in the new venture. His daughter continues his work and in doing so meets young Taylor whom she wins over to the spirit of forestry. The complications that arise, the effort of an unscrupulous and malicious politician to tax her young timber out of the county and the obstinacy of the elder Taylor to see anything but sentiment in "Foraker's Folly," is made the basis of a gripping romance, so absorbing in fact as to distract one, at times, from the author's lessons in forestry. The student will find this book a good antidote after a difficult course in the mysteries, if there are any, of forestry. The author has succeeded in writing a splendid romance and at the same time a very clear and simple description of the growth of a young forest, its protection, its financial aspect, and its harvesting.

It is not only an entertaining novel but also an interestingly written, concise, but strong, dissertation on forestry. If the author has not made forestry a life study he shows evidence of having been excellently and correctly coached. The book comes at an opportune time, and it offers the public a good opportunity to learn much of forestry while being entertained. E. F.

Lumber Manufacture in the Douglas Fir Region. By H. B. Oakleaf. Commercial Journal Company, Inc., Chicago, October, 1922. Pp. 182, fig. 53.

Coming closely upon the heels of Bryant's "Lumber," this book may seem superfluous, but even a very casual examination will prove that it is one for which many western lumbermen have found need. Instead of being a general work on lumbering it is limited to the manufacture of lumber in the Douglas fir region, and therefore has considerable space for important detail. The author's title is very conservative for

much of the contents is applicable to other western regions where logs are large.

The book is the result of what must have been a very big and difficult undertaking in assembling into one cover the methods and costs of constructing and operating plants for the manufacture of lumber in the Douglas fir region. The fact that the author is able to give what appear to be authoritative figures on cost of installation and operation gives the work considerable value to the lumber manufacturer. Even though the costs are for an earlier period they are valuable as a basis and also because at that time conditions were more settled.

After discussing the size, type, and cost of Douglas fir mills, there follow notes on the factors that must be given consideration before selecting a mill site. The saw mill building is described, with partial specifications for its construction; following this each important machine or piece of equipment is given detailed attention, with figures on cost and power required, notes on their care and operation, and plans for their general arrangement. The kiln drying of lumber and air seasoning and storage are given careful consideration and are very logically and well presented. Other topics covered are the planing mill; shipping; power; fire protection; wages; taxes; insurance; depreciation; capital; log grades; yields; prices; and Douglas fir lumber products. Considerable attention is given this last subject and the products mentioned include flooring, siding, staves, pickets, decking, timbers, ties, boards, and many others.

It is a particularly welcome book at this time because the Douglas fir region will soon dominate the lumber industry of the Nation and many men are seeking detailed information regarding it. It is perhaps the first studied attempt to bring under one cover notes on equipment, methods, and costs of lumber manufacture in a specific region, and none is more recent. For the cost data alone the book is worth the price. The information was gathered when the author was in the Forest Service (1916), and the original plan was to publish it as a companion bulletin to W. H. Gibbon's "Logging in the Douglas Fir Region," U. S. D. A. Bulletin 711.

There are upward of fifty unusually good line cuts, many of which appear to be original. The man who is thinking of going into lumber manufacturing in the Douglas fir region should first of all invest in a copy of this book. E. F.

PERIODICAL LITERATURE

MENSURATION, FINANCE, AND MANAGEMENT

German Working Plans in Alsace-Lorraine

Parde, Director of the Ranger School at Barres, France, reviews certain differences between German and French working plans, based on a trip through Alsace-Lorraine during 1922. He comments on fourteen different technical phases of forest working plans and summarizes his conclusions as to whether the German or French method is preferable. His criticism appears to be based solely on technical grounds.

Quite frequently in Germany, a group of forests is managed on a sustained yield, and Parde regrets that such a system is not applied in France; for example, near the town of Blois are found the forests of Blois, Russy, and Boulogne. Each forest has a distinct working plan and separate annual cut. Parde argues that the German system should be followed with but one working plan and one prescribed annual cut for the three forests.

Some of the minutia in German working plans Parde believes to be more or less superfluous. He refers especially to the classification of five soil qualities; theoretically, an excellent scheme, but practically, difficult to establish. Nor does he agree with the German system of rotations divided into periods of equal lengths (20 years), but prefers the French system of varying the length of the periods according to local conditions. In German working plans there is no distinction between the general regulation of exploitation and the special regulation which the French use, and he concludes that "The absence of a special regulation of exploitation is in my opinion the principal criticism which can be made of the German working plans." He feels that the French idea of a general exploitation plan applicable for the whole rotation and a special plan for the current period makes the French plan much clearer and much easier to apply.

The Germans prescribe a yield for timber, for stumps and for small wood. In France, the yield does not distinguish between classes of timber. Parde argues that the German method is unnecessary and in practice more or less of a dead letter. The Germans calculate the yield with the use of volume tables and the volume of the wood is based on

actual measurements. On the other hand, the French calculate both the yield and the cut from volume tables, and therefore have no exact figures on the actual amount removed. The German system is certainly more exact.

Parde also argues that too much freedom is given German forest officers in locating their cutting areas wherever they desire, provided the prescribed cut is not exceeded. According to Parde, "Theoretically the German plan appears excellent, for it permits foresters to take account of all conditions at the time of cutting—silvicultural, market, and prices of the different classes of wood, etc., . . . but practically it is frankly bad." It gives the local officers too much freedom with the result that they are apt to overlook the need of cutting areas difficult to get at.

The most serious criticism of German working plans in the opinion of the reviewer is that the Germans relegate this important work to young untrained technical men; while in France it is performed by the most experienced.

Those interested in the technical minutia of working plans would do well to study Parde's comments. T. S. W., Jr.

Revue des Eaux et Forêts, November, 1922. *Notes sur les methodès allemandes d'amenagement des forêts,* par L. Parde, pp. 370-381.

POLITICS, EDUCATION, AND LEGISLATION

Changes in Curriculum of Swiss Forest School

Dr. Weber, as chairman of a standing committee of the Swiss Forestry Association, reports to the general meeting of August 21, 1922, on the work of this committee on proposed changes in the curriculum of the forestry division of the technical high school at Zurich.

After pointing out that it is an easy matter to muster a number of desirable changes if it were not for practical considerations which preclude their accomplishment, the committee, after examining the subject from all sides, is of the opinion that emphasis in reform must be placed not only on (1) actual changes in the studies themselves, but equally on (2) the methods of examinations, and (3) on the requirements for entrance.

The report then proceeds to examine these three matters at length—beginning with the third—and while the details are not of interest to

readers of the JOURNAL, the conclusions reached may be, especially to those engaged in teaching forestry.

In the matter of preparation for entrance to the professional school, the committee recommends a requirement of several months of practical experience in forestry so as to judge the candidate's fitness for the profession. This, it is pointed out, will also serve to diminish the present overcrowding in forestry.

Regarding the examinations themselves, the committee recommends that a commission be created for this purpose, on which both teachers and practitioners are represented.

The bulk of the report deals, as is natural, with reforms in the curriculum itself. The committee finds that the number of credit hours assigned to *forest utilization* and *wood technology* is insufficient. It proposes a four-hour course in utilization—besides a one-hour course in marketing of forest products—and a two-hour lecture course in technology with special emphasis on wood preservation, paper manufacture, and wood distillation. A special professorship in wood technology is recommended.

The report further recommends that during the required year and a half of practical experience *after* graduation, several weeks be spent in a large sawmill. Perhaps practical instruction can be arranged in co-operation with the Swiss forest industries.

In conclusion the report emphasizes that above all the quality of the instruction depends upon the quality of the teacher and that mere matters of curriculum are secondary in importance to the personal conceptions which individual faculty members have as to the scope of their teaching activities. A. B. R.

Weber. *Bericht des Standigen Komitees Über die Studienplanreform.* Schweiz Zeitschrift für Forstwesen, 1922. (Reprint.) See also translation in *Journal Forestier Suisse,* December, 1922. Pp. 221 to 224 (to be continued).

SILVICULTURE, PROTECTION, AND EXTENSION

Eradicating Canker on Silver Fir

Guinier, director of the Nancy Forest School, discusses at considerable length the injury caused and the remedy for canker which is so common on silver fir in France in the Jura and Vosges mountains.

Guinier first explains that there is no cure for the disease, and therefore it must be prevented. Since there is no anti-septic and

since the host plant is too numerous to be destroyed, he recommends cutting out branches and small trees whose stem is affected when the stand is still in the sapling stage. Such an operation, which is described in detail, with labor at 30 cents an hour, costs about $2 per acre. This is, of course, out of the question in the United States on account of the high expense involved and the relative low value of our forest crop.

T. S. W., Jr.

La "Dorge," ou "Chaudron" du sapin. Guinier, S.F. de F-C. et B. October, 1922. Pages 333-347.

Introducing Conifers into Broadleaf Stands

Millischer, Conservator of the French Forest Service at Lons-Le-Saunier, comments in great detail on the introduction of conifers into broken down hardwood stands. He explains what the operation is, when it should be done and why and how it should be carried out, by natural or artificial means.

T. S. W., Jr.

Sur L'Enresinement. M. Millischer. S.F. de F-C. et B. October, 1922. Pages 320-332.

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NOTES

Resolutions

On November 9, 1922, the following resolutions were passed by the Empire State Forest Products Association:

I.—*Whereas,* Both a National and a State forest policy of constructive character is urgently needed and is in process of development,

Be it resolved, By the E. S. F. P. A. in convention assembled, that it urges the adoption of adequate measures for the protection and perpetuation of the forests of New York State to the end that all forest land may be maintained at the highest point of productivity and that it specifically recommends:

(1) Intensive fire prevention and protection of the forest from insects and other damage shall be assured by the hearty support of the State authorities, and by enlisting the interest and backing of the public, especially the co-operation of private owners of timberland.

(2) The extension of the principle, previously stated, of public ownership of lands suitable for the production of forest growth.

(3) More extensive reforestation of American public lands and the encouragement of private forest planting, and,

Be it further resolved, That the acquirement and development of municipal or town forests is recommended as a measure of wide educational and practical value in providing future timber supply, protecting watersheds and teaching the people the importance of the forests and their proper care; besides becoming ultimately an important source of income for the town or municipality,

And be it further resolved, That we endorse the principle of co-operative forest fire insurance by the State and private owners, under a plan whereby such insurance would be underwritten at cost and compensation paid not only for loss sustained, but whereby fire preventive measures would be more strictly applied and enforced on insured timber.

II.—*Whereas,* The unrestricted increase and spreading of beaver has caused serious damage in the Adirondack region, and

Whereas, Once a curiosity in this region, they have bred so rapidly as to over-run the entire Adirondacks to the detriment of the timberland owner, camper and tourist,

And, whereas, The beaver are now protected by law and no compensation can be legally secured for damages wrought;

Therefore, be it resolved, That legislation be enacted by the State for an open season of sixty days for the legal taking of beaver (in order that their numbers and damage be kept within control).

III.—*Whereas,* There is urgent need for the establishment of a Northeastern Forest Experiment Station, to help in solving many problems, which require full and accurate scientific data that are not now available, and

Whereas, The U. S. Forest Service has recommended the establishment of such a station to be added to the existing chain of its forest experiment stations, and

Whereas, The Secretary of Agriculture has given the project his approval and has recommended it to the Director of the Budget.

Be it resolved, That it is the sense of this Association that the Director of the Budget and the Congress should give favorable consideration to the request for funds for the establishment of a Northeastern Forest Experiment Station.

IV.—*Whereas,* The ever-changing political complexion of this State tends to a far too rapid change in the personnel of the officers charged with the care and management of our State forest lands, and

Whereas, An uninterrupted plan of forest management is essential for the best results,

Be it resolved, That this Association would look with favor upon the enactment of legislation which would result in changing the present method of the appointment of the Conservation Commission to a method such as was adopted by the Constitutional Convention of 1915, through the creation of a Conservation Commission similar to the present Board of Regents.

V.—*Whereas,* The Association has been unusually fortunate in having as its president for the last seven years a man who has given his best thought and effort to our work, and

Whereas, His retirement marks the period of great improvement in the standing of the Association, both within the State and the Nation,

Be it resolved, That we record our hearty appreciation of all that President Ostrander has done during his incumbency and voice our thanks to him for his work in our behalf.

VI.—*Whereas,* The New York State College of Forestry has extended to us the hospitality of their beautiful building wherein to hold our meeting, and

Whereas, The faculty of the college has aided materially in the success of our convention,

Be it resolved, That we extend our thanks to Dean Moon and his colleagues for their many courtesies and helpful efforts.

A Unique Gift to the Yale School of Forestry

The School of Forestry has received a gift of unusual interest from the Yale foresters of the Orient. This is a historic table made of *Narra,* which is the most highly prized decorative wood of the Philippine Islands. The table is nearly eighteen feet long and about five feet wide, and is admirably suited for the reference library of Sage Hall, the new building of the School of Forestry. The table was originally presented to the Mayor and Council of Manila in 1886 by the Manila Bontanical Garden which formerly had charge of the Bureau of Forestry under the Spanish regimé. The crating used for the shipment of the table is made of boards each representing a different species of Philippine woods. Thus the crate was made up of museum specimens of forty-five different species of wood. The School of Forestry already has a large collection of tropical woods and this new gift will be a material contribution to that collection.

The Yale foresters of the Orient are graduates of the School of Forestry located in the Philippine Islands, China, and the East Indies. The Chief of the Bureau of Forestry of the Philippine Islands, A. F. Fischer, was a graduate in the class of 1911. He has associated with him three other graduates of the School of Forestry. W. F. Sherfesee, at one time Chief of the Philippine Bureau of Forestry, is Advisor in Forestry of the Chinese Republic. In China also are seven Chinese who have had the Yale training. Other Yale foresters are located in Sumatra, the Federated Malay States, Arabia, and India.

White Pine Near New York City

I was recently called upon to estimate a small tract of 19.4 acres of white pine near Monticello, Sullivan County, New York. This stand was so unusual that I believe it worth recording in the JOURNAL.

Five quarter-acre circular sample plots were taken, great care being exercised in the measurement of the radii of the circles, so that no mistakes were made as to which trees to include. The D.B.H. of each tree was measured with calipers and then the individual logs were estimated by eye as to length and diameter at the top inside the bark. The top diameters were estimated down to six inches D.I.B. These estimates were checked by occasional measurements with a hypsometer. All trees whether dead or living which contained sound merchantable timber are included in the estimate. From the figures so obtained the volume of each plot was calculated, using the International log rule for a ⅛-inch saw kerf. The following figures resulted: The maximum stand per acre for any one plot showed 74,620 board feet of white pine; 80 board feet of hemlock, and 1,400 board feet of hard maple.

The total stand on the tract and the average volume per acre were as follows:

Species	Total stand	Average acre
	Board feet	*Board feet*
White pine	792,600	40,856
Birch	4,652	240
Hemlock	2,996	154
Hard maple	52,708	2,717
Cherry	272	14
Total	853,228	43,981

The average D.B.H. and number of trees per acre for the heaviest part of the stand were as follows:

Species	Diameter	Number
	Inches	
White pine	18.025	124
Birch	8	2
Hemlock	11.5	6
Hard maple	16.25	6

The average D.B.H. and number of trees per acre for the whole area were as follows:

Species	Diameter	Number
	Inches	
White pine	16.295	89.3
Birch	4.57	4.7
Hemlock	6.83	4.0
Hard maple	10.82	64.0
Cherry	2.67	1.3

E. C. M. Richards.

SOCIETY AFFAIRS

The Annual Meeting

The annual meeting of the Society, held in the State House at Boston, December 29 and 30, was one of the most successful that has ever been held, in respect to both attendance and interest. In all 128 members and guests registered at the sessions on the 29th, and several others were present at other sessions who failed to register. Of the 128, 52 were Senior Members. The large attendance may be attributed partly to the fact that Boston is easily accessible to a large number of foresters, and partly to the sessions of the New England Forestry Congress, which were also held in the State House, from December 27 to 30. On the 28th the meetings were held under the joint auspices of the Forestry Congress, the Society of American Foresters, and the Section of Social and Economic Sciences (Section K) of the American Association for the Advancement of Science.

As was perhaps to be expected in New England, the prevailing undercurrent in many of the papers and discussions was a note of optimism—a feeling that things are going ahead very nicely, fully as well and probably a little better than any one had thought they would. Several speakers emphasized the fact that timber-growing really *pays* in the Northeast, and that not only is public sentiment lining up in support of forestry, but private owners are beginning to understand that it is to their economic advantage to take steps toward raising timber. Certain measures, however, although admittedly desirable from the standpoint of the "greatest good for the greatest number in the long run," cannot reasonably be demanded by the public until conditions make them "economically feasible" or desirable. So all that is necessary is to sit down and twiddle our thumbs and wait for Economic Forces to get in their work, when everything will be lovely and there will be no hard feelings on the part of the timberland owners.

This would be a most comforting theory, did it not occur to one to wonder whether the private owners have a monopoly on economic forces, and whether "economic desirability" may conceivably mean something else than the immediate effect on the bank accounts of a small minority of the individuals who are interested in maintaining the productivity of our millions of acres of forest lands.

Most of the papers presented at the meeting will be published in this or subsequent issues of the JOURNAL. For the benefit of members who were not present at the meeting, the minutes are printed, practically in full, below.

Minutes of the Annual Meeting of the Society, at Boston, Massachusetts, December 29 and 30, 1922

The meeting was called to order by Vice-President Chapman at 9.40 a.m., in Room 427 of the State House.

The following papers were read and discussed:

1. "Forest Fire Insurance Possibilities in the Northeast," by Louis S. Murphy, was read by W. N. Sparhawk.

2. "The Working of the Massachusetts Tax Law," by R. T. Fisher.

3. "A Proposed Tax Law for New York State," by C. R. Pettis, read by F. F. Moon.

Discussion of 2 and 3 brought out the point that even if all the eligible timber property in Massachusetts were registered under the law at once, the towns would lose only a small portion of their tax revenue, which would doubtless be made up by a blanket increase in assessment of timber ready to cut. Simplicity in the legislation makes it easier to put across—requiring merely that the land be used for producing timber crops, without specifying methods. The law does not encourage speculative holding of merchantable timber, because only stands below a specified volume per acre are eligible for registration. In Indiana, woodland may be classified under a nominal assessment of one dollar an acre for the land, and no value for the timber, provided it is not grazed. In Michigan the law passed for the purpose of reducing taxation on farm woodlots has never been effective, being easily evaded by the assessors. For conditions like those of northern Michigan, it was suggested that higher taxes would be better than low ones, as they would compel large owners to put their lands to use or get out.

4. "The Railroad Fire," by R. C. Hawley.

Some discussion relative to basis of estimating damages in presenting claims. Condon suggested that efforts should be made to make other people appreciate their responsibilities, and deplored the idea of making the railroads the goat. Some railroads sincerely attempt to prevent fire damage along their rights-of-way.

5. "The Relative Unimportance of Protection and Silviculture as Compared with Sustained Yield," by Karl W. Woodward.

6. "Wood-working Industries and the Sustained Yield," by H. O. Cook.

Discussion followed regarding the possibility of getting forest regulation (sustained yield) across by legislation or otherwise, and relation to economic considerations. Wilson suggested that more progress will be made if we can get the public to realize that sustained yield will result in better economic and social conditions, than by any amount of talk about brush disposal, methods of cutting, and fire protection. Larsen, Hawley, and Collingwood pointed out that the fire problem and condition of cut-over lands, as the key to sustained yield, merit a great deal of attention; Dana said that this is all right if we recognize that protection and silviculture are means, and sustained yield the end desired. Moon suggested that the idea is to change our talking point, rather than our purpose, which has always been sustained yield.

7. "The Fuel Wood Situation and How it Affects the Practice of Silviculture," by F. W. Besley.

Discussion brought out the need of educating farmers in methods of properly handling their woodlots. In some States this may be accomplished through the county agricultural agents, with the cooperation of the State directors of extension work. County agents should all have some forestry courses in their agricultural school training.

8. "A Land and Economic Survey in Michigan," by P. S. Lovejoy.

Prof. Chapman appointed as the Committee on Resolutions R. C. Hawley (Chairman), T. S. Woolsey, and D. E. Lauderburn, after which the meeting adjourned for lunch, and was called to order again at 2.15 p.m. by Vice-President Chapman.

The following papers were then read and discussed:

9. "Revolutionizing Nursery Practice," by W. G. Hastings.

10. "The Forest Situation in Pennsylvania," by J. S. Illick.

11. "The Management of Privately Owned Timberlands," by George T. Carlisle, Jr.

12. "What Northern New England Needs from Foresters," by D. A. Crocker.

Considerable discussion followed, relative to the problem of disposing of the hardwoods. This was stated by Wilson and others to be

primarily a problem of engineering—cheaper transportation. There was some question as to the probable effect of abundant future supplies of pulp and distillation material in the South upon the utilization of northern hardwoods. Morse stated that there is really a great deal more softwood reproduction under the hardwoods than is generally realized.

13. "Forest Entomology as a Subject of Importance to Foresters," by H. B. Peirson.

14. "Budworm Injury Considered by Forest Types," by F. C. Craighead.

The discussion of these two papers brought out, among other things, the possibility of reducing insect damages to some extent by adopting proper silvicultural methods. Lovejoy mentioned Quarantine 37, relating to the importation of nursery stock, and the efforts of unscrupulous dealers to have it revoked.

15. "Forest Conditions in Australia," by H. D. Tiemann: A brief synopsis of this paper was given, followed by lantern slides.

The following papers were read by title only:

16. "A Plea for Common Sense in Changes of Botanical Nomenclature," by Emanuel Fritz.

17. "The Relation of Weather Observations to Fire Prediction," by E. F. McCarthy.

18. "Protection Forests—the First Step toward Forest Management," by Raphael Zon.

19. "Serious Ground Fires in Western Pennsylvania," by Walter D. Ludwig.

The meeting then adjourned, to reconvene at the Boston Harvard Club at 7.30 p.m., for a smoker (attended by about 90 members and guests). At this session S. T. Dana spoke on—

20. "What the Northeastern Forest Experiment Station Should Aim At."

A general discussion followed, emphasizing, among other things, the close relation that should be maintained between such a station and the timberland-owning industries of the region. W. B. Greeley read a statement prepared by O. M. Butler on—

21. "Opportunities for the American Forestry Association," concluding with additional remarks of his own. This matter was extensively discussed.

The meeting was again called to order by Vice-President Chapman at 9.40 a.m., Saturday, December 30, in the State House.

The following paper was read by title and discussed:

22. "Fire Damages on New England Estates," by T. S. Woolsey, Jr.

The point was made that damages in such cases may be considerably more than the actual forest values involved, and a competent real estate expert may be a better judge of such value than a forester. Hawes raised the question of what interest rates should be used in appraising forest fire damages in general. A motion was made by Woodward, and adopted, that a committee consisting of Hawes and two others be appointed to consider the matter of interest rates and report at the next annual meeting.

The annual business meeting followed.

Reading of the minutes of the last meeting was waived. The report of the Secretary (W. N. Sparhawk) was read and accepted.

Upon motion of Lovejoy, the President was instructed to appoint a committee to plan and initiate the collection and compilation of material for the history of forestry in the United States and Canada.

The report of the Treasurer (F. W. Besley) was then read and accepted, subject to modification to bring it up to December 31, and subject to examination by the auditors.

No report was presented by the Editorial Board, save for the statement by the Secretary that the circulation of the JOURNAL is now over 1300.

The report of the Member of the Executive Council in Charge of Admissions (S. T. Dana) was read and accepted. Considerable discussion followed relative to the policy of choosing Associate Members, and a communication from the Chairman of the California Section was read, after which it was generally agreed (without formal vote) that the grade of Associate Member should remain as it now is, and that the Executive Council should continue its policy of electing to this grade, after careful scrutiny, especially qualified men in allied scientific and practical lines, leaving it optional with the individual Sections to adopt any qualifications they may choose for associate members of Sections. The Secretary raised the question of how long newly elected members should be carried on the rolls if they fail to reply to repeated notices of election. It was the sense of the meeting that men who fail to reply within six months may properly be dropped. (This does not mean that they must pay their dues within six months, for the Constitution allows twelve.) There was also some discussion

regarding delay in elections. Several members expressed the opinion that a reasonable delay is rather desirable than otherwise. Dana stated that procedure is now fairly well standardized, so that action in most cases can probably be taken within six months, if Sections and individuals sponsoring candidates co-operate effectively with the Council.

Reading of reports by the committees on education, standardization of fire protection, taxation, and classification of sites were waived, with the understanding that they will appear in the JOURNAL.

The proposed Union of Biological Societies was then discussed by Barrington Moore and others. With the understanding that such action carries no financial obligation, Moore's motion that the Society affiliate with the Union was adopted without a dissenting vote.

The report of the Committee on Resolutions was then presented by the Chairman, R. C. Hawley, and the following resolutions were adopted as read:

1.—*Whereas,* The practice of forestry in the United States must in the immediate future be greatly extended in order to provide wood for the people of a great nation, to take the place of the primeval supplies that are disappearing, and

Whereas, Our present knowledge is inadequate properly to direct this growth; therefore, be it

Resolved, That the Society of American Foresters recommends and urges the establishment under the Forest Service, United States Department of Agriculture, of two additional forest experiment stations, one in the Northeast and one in the Lake States, and that adequate appropriations be made for the purpose.

2.—*Whereas,* Acquisition of forest land by the Federal government, under the Weeks Law, has proven a real factor in changing fundamentally the forest management on two million acres of forest land in the eastern mountains, and

Whereas, This bears directly upon a permanent timber supply in the United States; therefore, be it

Resolved, That the Society of American Foresters recommends the continuation and enlargement of these purchases as a part of a National Forest Policy.

The following resolution was adopted after adding the amendment proposed by W. G. Howard, regarding allotment of co-operative funds:

3.—*Whereas,* In the United States the losses from forest fires are still a serious menace to permanent forest production, be it

Resolved, That the Society of American Foresters recommends that the several States be urged to create or perfect and extend their forest fire appropriations, policies, and plans, and that there be increased Federal co-operation with the indivdual States in forest fire protection, to be secured by larger appropriations, by further intensive studies of the best local protective measures, and by additional general publicity through the publication and distribution of regional fire statistics, *Provided,* That in the allotment of such appropriations due regard be given to each State's own efforts to provide its own protection.

The following resolution, submitted by W. R. Mattoon, was tabled, upon motion by Munro, after some discussion:

Whereas, Black locust (*Robinia pseudacacia L.*) because of its rapid growth, adaptability to a wide range of soils, and the very durable character of its wood, is one of our most valuable timber tree species, and

Whereas, The need for long-lived timber of this kind for use as fence posts and poles is urgent over practically all of the eastern United States, particularly in the farming industry and because our chestnut rapidly is becoming almost extinct due to the chestnut blight, and

Whereas, An insect commonly known as the locust borer (*Cyllene robiniæ* Forst.) is a serious pest locally throughout the whole region of the black locust, thereby entailing heavy money losses, and, over large sections of the eastern United States practically preventing the growing of black locust on a commercial scale; therefore, be it

Resolved, That the Society of American Foresters bring the present situation regarding the growing of black locust to the attention of the entomologists of this country and earnestly request them to seriously consider the subject with the purpose in view of finding, if possible, practical means by which the black locust borer may be eradicated or controlled so as to make possible the growing of this valuable tree for timber; and, further be it

Resolved, That copies of this resolution be referred to the Council of the American Association of Economic Entomologists and to the Federal Bureau of Entomology.

The following resolution, submitted by E. C. Richards, was then read and discussed at length:

Whereas, Especially in New England and eastern Canada, the scientific handling of forest land has reached the stage of intensity where

a body of intelligent, well-trained, practical men are already needed actually to apply in detail in the woods the plans outlined by technical authority, and

Whereas, This body of practical woods-workers do now and will increasingly need to be trained along two lines, viz: (1) A greater and more sympathetic understanding of the aims of technical forestry; and (2) A stronger solidarity among such workers, woods bosses, etc., and exchange of methods and means of putting the theoretical plans into actual effect; therefore, be it

Resolved, That the Society of American Foresters recommends to and urges each local section to establish and encourage a local body of non-voting associate section members, from the ranks of rangers, portable sawmill men, woods bosses, etc., in its region, and to encourage the attendance of such members at its meetings, especially its field meetings, and that through subscription to the JOURNAL OF FORESTRY and other means every aid be given to make such members feel that they are a real vital part of the forestry movement.

P. T. Coolidge and Lauderburn suggested that the same end could be accomplished more readily by building up local clubs, such as the Penobscot Forestry Club, where the local men could more conveniently attend meetings. Such clubs might be sponsored by the sections or by individual members, but need not be part of the Society. Munro suggested that the woods-workers might possibly lose respect for the foresters if they should attend our meetings. E. S. Bryant favored a discussion of the matter in the JOURNAL OF FORESTRY, rather than the adoption of a resolution at this time. The resolution was then tabled.

Upon motion duly made and seconded, the appointment of representatives of the Society on various organizations such as the Washington Academy of Science, Board of Control of Botanical Abstracts, American Association for the Advancement of Science, and the Union of Biological Societies was left in the hands of the incoming President.

Upon motion of W. G. Howard, a vote of thanks was given to the local men and others who helped arrange for the meeting and contributed to its success.

The Secretary then read the report of the tellers who counted the ballots for officers for 1923, resulting as follows:

President, Ralph S. Hosmer.

Vice-President, Herman H. Chapman.

Secretary, William N. Sparhawk.

Treasurer, Fred W. Besley.

Member of Executive Council for 5 years (1923-1927), Robert Y. Stuart.

President Hosmer then took the Chair and made a brief talk, in which he mentioned the need of strengthening our organization, co-ordinating and co-operating with the individual sections, and developing the JOURNAL. He also spoke of the desirability of the Society as a whole giving its support to the national forestry policy when finally formulated.

The meeting adjourned at 12 o'clock, noon.

W. N. SPARHAWK,
Secretary.

REPORT OF THE SECRETARY

One of the most important tasks of the past year was the preparation and publication of the revised membership list, which had been postponed several times in order to include lists of newly elected members. The last previous list, issued in 1917, contained just under 400 names, while the new one contains nearly 800. It is believed that this list can be kept fairly up-to-date for several years by issuing once or twice a year insert pages containing lists of new members, changes of address, and other changes.

Since the last annual meeting, four Senior Members (McLean, Hodson, Parkinson, and Saxton) and one Member (Kitchin) have resigned; one Senior Member (Wynne) and one Honorary Member (Dr. Rothrock) have died; and seven Senior Members and one Member have been dropped for non-payment of dues for 1921. Two refused election to Senior Membership, and five to Membership, while three and fifteen, elected to Senior Membership and Membership, respectively, during the past several years, having neither accepted nor refused their election after repeated notices from the Secretary, were dropped from the rolls. The total membership is now 786, of whom 7 are Fellows, 410 Senior Members, 280 Members, 76 Associate Members, 10 Honorary Members, and 3 Corresponding Members. This is an increase of 92 over one year ago.

The Pennsylvania and Southern Appalachian Sections completed their organization early in the year, making 13 Sections in all. The Missoula Section revised its by-laws and changed its name to Northern

Rocky Mountain Section. Preliminary steps have recently been taken to organize a Section in Michigan, perhaps including Ohio and Indiana. It is hoped that a Section may be established during the next year or two in the Gulf States region also, where the Society needs strengthening.

Reports of their activities during the year have been received from all but three of the Sections. I shall not attempt to summarize them here, but shall merely take the opportunity to suggest that better coordination and exchange of ideas among the several Sections seems highly desirable. Several Sections issue occasional news-letters for the benefit of those of their members who cannot conveniently attend meetings. An interchange of such material would help to keep the different Sections in touch with each other, and considerable might be accomplished if the JOURNAL OF FORESTRY could devote a definite space in each issue to material furnished by the Sections. I should like to see the Committee on Sections revived, with instructions to cooperate with the Executive Council in devising ways to make the Sections mutually helpful, and to strengthen the Society in general.

The California Section has proposed two amendments to the Constitution, which if adopted seem likely to be a beginning toward making the Society a federation of Sections rather than a united Society. These have been discussed in the last few numbers of the JOURNAL, and will be submitted to ballot early in the year. At the same time two or three other minor amendments will possibly be submitted.

The work of the Secretary's office has been growing steadily from year to year, as the membership grows and the circulation of the JOURNAL increases. The paid circulation of the JOURNAL is now in excess of 1,300, about half going to members and the other half to outside subscribers. The Society's supply of back numbers of the Forestry Quarterly and of the Proceedings was largely increased during the year by receipt of several hundred copies from Dr. Fernow and Mr. Gaskill. Our stock of back volumes is becoming more and more of an asset as the years go by. Sales of back numbers during the past year amounted to about $300.

Among the miscellaneous matters handled during the year were the following:

1. As instructed at the Toronto meeting, copies of the resolutions protesting against the transfer of the Forest Service and Alaskan forests were sent to all members of both Houses of Congress, to the President, and to the members of the Cabinet.

2. In response to an appeal made by a committee of American scientists, headed by Dr. Vernon Kellogg of the National Research Council and the Rockefeller Foundation, six sets of the Proceedings and JOURNAL from 1914 on were forwarded through the American Relief Administration for distribution among the scientific men of Russia, who have been isolated for several years from contact with the scientific work going on in the rest of the world. Most of the other scientific societies and a large number of individuals have also contributed their publications in the same way.

3. An attempt was made to hold a meeting at Salt Lake in connection with the summer meeting of the American Association for the Advancement of Science. As only two members of the Society appeared at the meeting, none was held.

4. The Society was invited to appoint representatives to take part in the work of subcommittees of the American Engineering Standards Committee, dealing with the standardization of railroad ties and the standardization of methods of testing wood.

5. The proposed plan for the Union of Biological Societies has been submitted to all of the Senior Members of the Society. Barrington Moore represented our Society at the conference on this plan.

6. Upon invitation, members were requested to represent the Society at the meeting of the National Federation of Outdoor Clubs held early in the summer in St. Louis, and at the Blister Rust Conference at Portland, Oregon, this fall.

7. In connection with the action taken at the Toronto meeting, an appeal was sent out through the several Sections regarding contributions to the permanent fund. No results have yet appeared.

I should like to take this opportunity to suggest several lines along which the Society may well take action in the near future.

The first of these is a central directory and clearing house of all the practising foresters in the United States and Canada. I understand that such a list is being compiled at the Yale Forest School now. It seems to me that the Society should support such an undertaking, and eventually take it over and keep it up-to-date. Aside from the appropriateness of such action, it should prove of decided benefit to the Society itself. There are now probably not less than 2,000 active foresters in America, of whom only about 700 are members of the Society.

The second matters concerns the organization of some sort of a federation or alliance for mutual benefit, of the various forestry associations and other organizations working to promote forestry. There are some 60 or 70 separate associations devoted wholly or in large part to forestry, and many other organizations, such as the United States Chamber of Commerce, the Federation of Engineering Societies, and others, have special committees or departments working on the forestry question. It seems to me that a great deal more could be accomplished if all of these activities could be in some measure coordinated. At least, each ought to have some sort of an idea what the others are doing or trying to accomplish. I think that our Society, representing the forestry profession of the continent, has a distinct duty to perform in advising and in a measure guiding certain of the activities of these other organizations. It may possibly be desirable that any action looking toward a federation of the sort suggested should be taken in cooperation with the American Forestry Association, whose interests and ours are more or less supplementary to each other.

Closely related to the preceding is the development of means whereby the technical foresters can make their voices heard more effectively by the general public. While the Forest Service has an organization whose purpose is to get forestry before the public, it should be remembered that many more than half of our members are not connected with the Forest Service. I believe that it would be an excellent thing for the development of forestry as well as for the Society itself, if timberland owners and the public generally would come to regard the Society of American Foresters as something of an authority on questions pertaining to technical forestry subjects, so that they would seek its assistance and advice in such matters. As a beginning, I should like to suggest the formation of a special committee to draw up definite plans for getting more effective publicity for the Society and its activities.

The final matter that occurs to me at this time concerns a very important piece of work, which ought to be initiated very soon and can be handled by no one better than by the Society. While forestry is still young in America, and most of the pioneers are yet with us, is the time to begin the gathering of accurate, first-hand records of the beginnings and the subsequent development of the profession and practice of forestry in North America. I do not mean the actual writing of a history, for that may not come for many years; but when

such a history is written, the records that we compile now will be invaluable. These records would include material of many sorts—personal data, development of policies, activities of associations and public bodies, history of controversies over various matters, development of forestry education, forestry legislation, growth of national and State forests, practice of forestry on private holdings, development of fire protection methods and silvicultural methods, forest history of regions (including such points as original forests, dates and methods of exploitation, subsequent history), and hundreds of others. I should like to suggest that a standing committee be appointed to plan and initiate the collection of material for this purpose.

W. N. SPARHAWK,
Secretary.

December 30, 1922.

RESULT OF THE ELECTION

In the ballot for officers and member of the Executive Council for the calendar year 1923, there were 294 votes cast. Three of these were eliminated because the voting members were in arrears for their 1922 dues, and two others were thrown out because they were anonymous and could not, therefore, be checked against the list of those eligible to vote. The total number of valid votes was 289, or 70 per cent of those entitled to vote. The result was as follows:

For President:

Ralph S. Hosmer	83
Clyde Leavitt	65
R. S. Kellogg	57
F. E. Olmsted	57
Hugo Winkenwerder	24
Not voting	3

For Vice-President:

H. H. Chapman	170
T. T. Munger	63
F. W. Morrell	54
W. T. Cox	1
Not voting	1

For Secretary:

W. N. Sparhawk	219
Chapin Jones	58
Not voting	12

For Treasurer:

F. W. Besley	169
Karl Woodward	110
Not voting	10

For Executive Council:

Robert Y. Stuart	143
P. G. Redington	93
Barrington Moore	48
Not voting	5

(Signed) C. R. Tillotson,
J. A. Mitchell,
Tellers.

Sections

The California Section has elected the following officers for 1923:
Chairman, Dr. E. P. Meinecke.
Secretary, Duncan Dunning.

At the annual business meeting of the Northern Rocky Mountain Section, held at Missoula on December 11, the following officers were elected for the ensuing year:

Chairman, J. H. Ramskill.

Secretary, R. H. Weidman.

Member of Executive Committee, E. F. White.

Membership Committee, Elers Koch, Chairman; F. G. Clark, J. W. Girard, H. R. Flint, G. A. Smith.

The Northern Rocky Mountain Section has prepared the following program of meetings for the winter 1922-1923:

December 11—Annual business meeting.

January 8—What we have learned to date about planting in Montana and Idaho. A review of results obtained and reasons for failures and successes. By D. S. Olson.

January 22—The use of radio telephone in the National Forests. By R. B. Adams.

February 12—Possibilities in the management of the Priest River Experiment Station Forest. By R. H. Weidman.

February 26—The fire protective associations of Idaho and Montana. Are they giving adequate protection? What is their future? Should their work better be taken over by the State? By R. N. Cunningham.

March 12—The future of the lumber industry in North Idaho.

Concentration of ownership; depletion of supply; life of the industry; effect on the community; the future of cut-over lands; relation of the Forest Service. By C. K. McHarg.

March 26—A little fire history. By H. R. Flint.

April 9—Topic selected later. By F. G. Clark.

Papers to be presented on dates to be assigned later:

The inferior species problem in Montana and Idaho. By Elers Koch.

To what extent should the U. S. Government acquire lands in Montana and Idaho? By M. H. Wolff.

Opportunities for the practice of intensive forestry on the eastern Montana Forests. By E. F. White.

Forest economics, a local problem. By T. C. Spaulding.

The stull industry of the Coeur d'Alene region. By S. V. Fullaway, Jr.

At its annual business meeting, held at Syracuse on November 9, the New York Section elected:

Chairman, W. G. Howard.

Secretary, O. M. Porter.

At the same meeting, Professor H. C. Belyea read a paper on "Types and Suggested Management for the Forests of New York State." Dean F. F. Moon, Col. H. S. Graves, and Chairman Howard spoke briefly. In the afternoon and evening joint sessions were held with the Empire State Forest Products Association, with talks by A. B. Recknagel, on the sample working plans prepared in connection with the proposed management requirements; by R. S. Hosmer, on the develpoment of a national forest policy in the United States; by Col. Graves, on public forests; and by George W. Sisson, Jr., and H. P. Baker, on their observations during their recent trip to Germany and Scandinavia.

The meeting of the Denver Section on January 19 was devoted to a discussion of the investigative program for the Rocky Mountain region for 1923. The meeting was addressed by C. G. Bates, Silviculturist in charge of the Fremont Experiment Station.

BACK NUMBERS WANTED!

The Society wishes to get hold of a number of copies of the October, 1922, issue of the JOURNAL. Anyone who has copies to spare may send to the Secretary, Atlantic Building, Washington, D. C. The Society will pay 65 cents for each copy returned.

REPRINTS

Reprints of articles appearing in this issue of the JOURNAL may be secured at the following prices if ordered immediately. Reprints of less than 4 pages are charged for as 4 pages.

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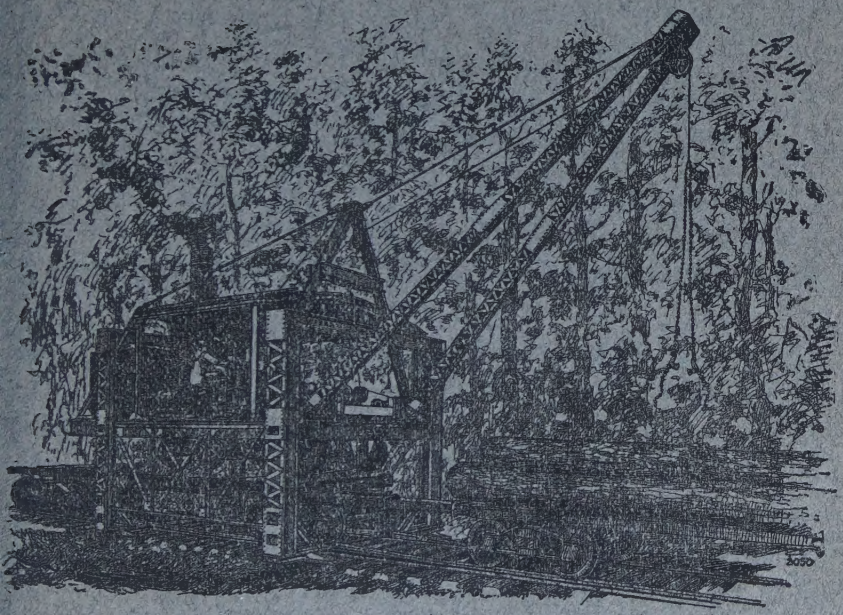

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